

Medical Problems in the Arctic

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Introduction

The title of this paper suggests that Arctic Medicine is different from ordinary medicine. The truth is that the differences are mainly ones of degree and emphasis rather than real differences in the diseases encountered; and to a considerable extent the differences that do exist are caused as much by the nature of the terrain, the sparsity of the population, economics, housing, education (or lack of it) as they are by the climate itself.

My interest in this subject stems from visits to various northern establishments and settlements made since the Defence Research Board set up the Arctic Medical Research Unit about four years ago. It will be apparent from what I have to say that this interest has been shared with many colleagues at the University of Manitoba. Dr. J. C. Wilt has collaborated in the study of infectious diseases; Drs. J. M. Lederman and A. C. Wallace are interested in causes of mortality and morbidity in Eskimos; Dr. Howard Reed made a study of eye conditions in Eskimos and last summer Dr. Frank Sellers took a special interest in infantile anemia. Other colleagues whose work is not directly mentioned in this paper, but who are interested in Arctic problems include Drs. G. C. Sisler and M. W. Wright who are interested in problems of isolation; Dr. Bruce Chown and his colleagues who are studying the genetics of Canadian Indians and Eskimos. The new Faculty of Dentistry is also interested in the dentition of our Arctic natives.

Permafrost

There is one aspect of the Arctic directly resulting from the climate which has a great influence on sanitation, and therefore on certain diseases, and that is the presence of "permafrost" or permanently frozen ground. Over most of the Canadian Arctic and extending a variable distance into the sub-Arctic zone, the ground is frozen all year round. This may extend down several thousand feet in some places. On the surface, the ground thaws to a variable depth in the summer—sometimes only a few inches and usually not more than a few feet. The importance of the permafrost varies with the terrain. In low, flat, muskeg country the permafrost forms an impervious layer through which water cannot seep. Therefore, the surface is covered by shallow pools, the bottoms of which is ice. As the water cannot drain away, waste disposal is difficult without contaminating all the surface water which in such areas is the source of drinking water.

In other types of terrain the permafrost may be a less important factor in hygiene such as the mountainous terrain of the East Baffin Coast and on Ellesmere Island, and also in areas where the soil is easily drained. An example of the latter is Old Crow, an Indian village in the Yukon situated on a bank 15-20 feet above the river. The light, gravelly soil is kept dry with a few drainage ditches even though the permafrost is only a foot below the surface in the summer¹.

Hygiene and Sanitation

Not only does the permafrost and the nature of the terrain greatly influence hygiene and sanitation, but also of considerable importance are the social habits of the people and their level of sophistication.

In their native state Eskimos live in small groups, sometimes consisting of only one or two families. They move with the seasons, usually depending on the availability of game. They meet with other Eskimos at the nearest trading post or mission settlement only a few times a year. Such people have relatively little need for sanitary conveniences and, as they are nomads, their excreta do not constitute a serious hazard to themselves or to others. Trouble arises when they cease being nomads and settle down in one of the small Arctic communities. Under those circumstances the risk of intestinal disease is appreciable, and typhoid has been reported from more than one such settlement in the Eastern Arctic. Within the last year there has been an outbreak of infantile diarrhea in Churchill, probably due to the same causes².

A considerable effort is being made by Northern Affairs, Indian and Northern Health Services and by the R.C.M.P. to improve the state of housing and the disposal of waste in inhabited areas. In the Indian village I mentioned above, pit latrines work quite well as the soil is light and well drained—even though it is a permafrost area. The community is well organized and the village is kept clean and tidy. Garbage is buried in the summer and dumped on the river ice in winter, and the dogs are kept tied up when not in use.

The white people in the Arctic live in permanent communities. However, the sanitary arrangements vary considerably. Weather stations, Hudson's Bay Company posts and mission posts are usually well built. However, they often use the "honey-bucket" system of sanitation, and the buckets are dumped at varying distances from the building. This system works, but is not ideal. At large places such as the Churchill Military Camp and the Resolute Bay R.C.A.F. Station, there is a piped and purified water supply and, therefore, a water carried sewage system through heated pipes. At Churchill the raw sewage is piped out into the bay under the ice

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in winter. At Resolute there is a large septic tank protected from the weather by being in the floor of a building. The effluent is piped off a few hundred feet through an electrically heated and insulated pipe to an area where it is not offensive to the camp or to anyone else, and which drains naturally to the sea one-half mile away.

In some small isolated, but wealthy places, where water is scarce but fuel and power are not, the effluent from ablutions and kitchen, and sometimes from an aerated sewage tank, is re-used for water toilets. Such systems using recirculated effluent require considerable maintenance staff beyond the resources of natives².

Intestinal Diseases

From this discussion of sanitation it is not surprising that typhoid and enteritis occur in Arctic populations living under, what would ordinarily be called, slum conditions.

Intestinal parasites also occur. The adult *Echinococcus* is a small tape worm which inhabits the gut of wild carnivores such as wolf and fox. The eggs are deposited in the feces of these animals and are ingested by caribou and moose, where visceral cysts develop containing the larvae. The wolves and fox become infected by eating the cysts to complete the sylvatic or wild cycle. Domestic dogs get infected from eating the raw viscera of caribou and then humans become infected from dog droppings. And so, human infestation is not uncommon in caribou country.

The other parasitic disease of note is trichinosis, the cysts of which are present in the meat of sea mammals hunted for food, particularly the walrus. Eating raw or undercooked meat causes the infection in humans. This is an acute and sometimes fatal disease, and skin tests indicate that infestation is quite widespread in Coast Eskimos of the Eastern Arctic.

We know that bacterial and parasitic disease of the gastro-intestinal tract occur in Eskimos, so it is not surprising to find Enteroviruses also present. Dr. Wilt and I^{3,4} have been testing blood from Arctic Indians and Eskimos to try to assess the prevalence of various virus diseases. These studies have shown, so far, that the Enteroviruses are prevalent and probably endemic.

Other Infectious Diseases

Antibodies to the viruses of the respiratory group, Adenovirus and Herpes simplex, are as common, if not more common, than in Winnipeg. The high incidence of antibodies to Adenovirus, Herpes simplex, the Echoviruses, in such remote areas as Ellesmere Island and Arctic Bay makes one think that the Eskimos do not get all their ills from the white man. At least, if they did, it was a long time ago, and they may harbour a few organisms of their own. The presence of psittacosis antibodies in 15% of the Eskimos sampled is further evidence of

this. Subsequent surveys have shown a higher incidence of these antibodies in the Western Arctic⁵.

I should mention the most important infectious disease of the respiratory tract amongst Indians and Eskimos, and that is tuberculosis. This disease was probably introduced to the native population early in their contact with the white man, but it reaches such proportions that it is far more important now to them that it is to us. However, the vigorous program of mass x-ray for case finding by the Indian and Northern Health Services and the treatment in sanatoria has made considerable inroads on the disease. Some areas where a few years ago tuberculosis was rife are now virtually clear of active cases.

Eye Disease

Another aspect of the tuberculosis problem, I would like to mention, is phlyctenular keratoconjunctivitis. It was noted a few years ago that 10% of the Eastern Arctic Eskimos had corneal scarring. Although phlyctenular disease was known to be common in Alaska and has more recently been reported from the Western Canadian Arctic, there was some doubt about the etiology of these scars and the extent to which serious impairment of vision was resulting. Last summer Dr. Howard Reed went on the Central Arctic Survey along the west coast of Hudson Bay to investigate this problem. He found that the majority of scars were, indeed, due to phlyctenular disease, although some scars were also caused by Herpes simplex of the eye⁶. Serious visual defects do occur but they are relatively uncommon in both eyes. He also found very few acute cases, no doubt associated with the better treatment and control of tuberculosis, so that the problem is one which seems to be on the wane.

Degenerative Diseases

If infectious diseases are, as they seem to be, more prevalent in the Arctic and more important to the Eskimo than they are to us, the opposite is said to obtain with regard to arteriosclerosis and neoplasms. Whether this is true or not is difficult, at the present time, to say, as the information available on causes of morbidity and mortality is incomplete.

Eskimos are supposed to eat a great deal of fat and yet be free of arteriosclerosis. This is very interesting in view of the current theories that animal fats in the diet cause atherosclerosis. It is hard, however, to talk about one Eskimo diet. By and large Eskimos living by hunting, trapping and fishing eat a lot of protein and also fat. They may also be subject to periods of extreme dietary insufficiency. However, any that are in contact with trading posts—and I do not know of any that are not—trade their furs for flour, tea, sugar, tobacco, as well as ammunition and clothes, etc. Wage-earning Eskimos do this to an even greater extent. So, the diet is variable, and the incidence of degenerative diseases is not exactly known.

Cancer is also said to be rare in Eskimos, but cases have been reported. Although I have not seen any reports of lung cancer, Eskimos seem to smoke avidly.

Eskimos are generally considered to be round, chubby people, giving a general impression of obesity. I do not think this is true. They are generally stocky and well muscled, but not obese.

Deficiency Diseases

Malcolm Brown of Queen's University first reported that Eskimos living chiefly off the land had large livers which he considers to be due to a high intake of Vitamin A in the diet⁷. Certainly these Eskimos living off the land do not seem to have vitamin deficiencies. This is in contrast to some surveys made of Indians living on reservations in Northern Saskatchewan. Dr. Frank Sellers found some anemia, probably nutritional, in the West Coast Hudson Bay region⁸. The younger children had an appreciable incidence of low hemoglobin levels, which decreased in the older children and adults. These were Eskimos that, for one reason or another, were not living off the land, mainly because of the scarcity of game and, consequently, were on relief. The children are breast fed for a long time and dietary supplements which in the old days used to be pre-chewed meat, are now more liable to be some form of cereal.

It has been said that Eskimos and Indians do not have such a high incidence of degenerative diseases because they do not live long enough to develop them. This may be true, although, again, detailed statistics are hard to find. Their life expectancy at

birth is probably shorter than ours, but once they have survived the dangers of childhood, and particularly the first year of life, many seem to live to a ripe old age.

Conclusions

I have discussed various aspects of Arctic Medicine that we have found of some interest. Conditions in the Arctic are changing, and to some extent the problems are those of medicine in a sparsely populated frontier area. These will gradually disappear as the Arctic becomes developed and populated.

However, there are some problems, such as those of the natural history of infectious diseases and the relationship between diet and degenerative diseases which are of general medical interest and which are best studied in isolated communities.

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I.P.P.B. Therapy

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The introduction of the intermittent positive breathing machine in the treatment of acute and chronic pulmonary diseases is one of the interesting advances of recent years. Although it has been widely accepted, amazingly little has appeared in the literature on either its physiological effects or the indications for using it. The intention of this paper is, briefly, to describe the principles of this machine, discuss some of the studies that have been done on its physiological effects and finally, to discuss some of the clinical aspects of its therapeutic applications.

IPPB machines are being manufactured by many different companies. Those most widely used are the Bennett, the Emerson and the Venta-Lung made by Monaghan. All these machines operate in a similar manner, using pressure sensitive valves to control the flow of oxygen or air. They are

driven by the line pressure of an oxygen or compressed air system. Because the Venta-Lung is most widely used in this area its operation will be discussed more fully. It operates from an oxygen cylinder tank with a fixed reducing valve or directly from the standard line pressure of piped hospital oxygen which is 60 lbs. per square inch. It has three controls; one to control the mouthpiece pressure at which it cuts off; one to adjust the percentage of oxygen from 40 to 100% when using an oxygen supply, and one to regulate the amount of nebulization through the nebulizer apparatus. The pressure can be delivered through a plastic mouthpiece, an anesthetic face mask or a tracheotomy tube adapter. The positive pressure is initiated by a small negative pressure at the mouthpiece and will run until the pressure preset on the control dial is reached in the mouthpiece assembly. This is usually in the range of 10 to 25 cm. of water pressure. It will not stop until this pressure is reached. In the Venta-Lung, nebulization only occurs when positive pressure is being applied and

can be turned off entirely. This company will also supply an automatic cyler that can be preset to initiate positive pressure after a varying time interval of no air flow. This requires a closed system such as a cuffed tracheotomy tube or endotracheal tube and in this situation can be used as a means of artificial respiration.

As with any complicated machinery, these machines require a considerable amount of maintenance. The drugs used tend to oxidize and leave deposits in the assembly which leak back into the tubes and corrode them. There is always an element of infection present, thus a moderate amount of sterile technique must be adopted, using a supply of sterile mouthpieces or masks. The valve assemblies must be handled carefully or they become defective rather easily. Supervision is required on an "around the clock" basis, particularly in the more severely obstructed patients who require therapy during the evening and night as well as during the daytime. Thus trained personnel are required to operate as well as to maintain these machines.

The bronchodilator drugs used in the nebulizer are usually Isoproterenol (Isuprel) or Vaponefrin. These are aqueous solutions and do not clog the nebulizer. A large number of other agents have been used in various centres, but the above two appear to be the most efficacious.

Used without a bronchodilator, IPPB will hyperventilate normal subjects as shown by a drop in the partial pressure of carbon dioxide. However, in patients with pulmonary emphysema, hyperventilation is less or absent. In those with anoxia and persistent carbon dioxide retention, where oxygen is used to drive the machine, ventilation may be further depressed. If bronchodilator is used in the nebulizer hyperventilation will result in a greater percentage of patients. This hyperventilation, as measured by a reduction in the carbon dioxide levels, is often transient, lasting for a short period after treatment. These findings suggest that the main therapeutic effect is the efficient application of bronchodilator drugs.

One other aspect to be considered is the effect of IPPB on the cardiovascular system. Because the pulmonary blood circuit is a low pressure system, relatively small pressure changes brought about by this form of therapy may affect the blood flows. Measurements in animals² have shown that IPPB used during states of shock resulted in seriously reduced cardiac output. This is probably an effect on the venous return. In non-shock states there is no effect on the cardiac output. This has been attributed to a low average pressure during the cycle because the positive pressure is applied over a very short period.

Basically, then, the IPPB machine is just a fairly efficient method of giving a bronchodilator drug. It does not appear to improve the ventilation in severe obstructive diseases by virtue of its positive pressure, but it can be used to ventilate patients with respiratory depression resulting from a variety of causes. It is contraindicated in patients with poor venous return such as myocardial infarction, shock and peripheral collapse. In our experience, it would appear to be contraindicated in pulmonary emboli.

The most dramatic effect is seen in severe obstructive diseases such as status asthmaticus or severely obstructed pulmonary emphysema. In these, one is able to administer effective bronchodilator drugs while maintaining adequate ventilation. Once over the severe obstructive episode, they can be converted to the usual forms of treatment. It is also very useful in debilitated elderly patients or in those patients who, because of their illness or language difficulties, are not able to use a nebulizer during periods of moderate obstruction or pulmonary sepsis. In seriously ill subjects, with or without a tracheotomy, it can usefully be applied to hyperventilate basal areas to prevent atelectases as well as to administer therapy where infection and obstruction are present. Pre-operatively it is useful in two ways. First, where pulmonary disease is present a more rapid preparation is possible. Secondly, the patient becomes used to the machine and in the early post-operative period they are more amenable to taking treatments.

Recently considerable success has been obtained in the treatment of post-operative atelectases by the use of these machines. This is difficult to analyze critically. If these are due to a surface tension effect as postulated by Mead et al³, the short positive pressure episode may open these areas up more quickly. Work is being done at the present time to see if the incidence of post-operative atelectases can be reduced by the prophylactic use of IPPB. This work has been suggested by the remarkable lack of post-operative complications in those patients with pulmonary disease who have been treated before and after general surgical procedures.

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Serological Suicide

Paul Green, M.D., F.R.C.P.(C)

The rigors of a Manitoba winter, with its dreary prospect of more to come may be a reason for allowing fancy to lightly turn to thoughts of suicide. Oddly enough the peak incidence of successful application of such thinking appears to be in the Spring, at a time when the incidence of many diseases is greatest. Menninger in his book "Man Against Himself" has suggested that diseases such as alcoholism, peptic ulcer, ulcerative colitis, etc., may indeed be subtle ways of committing suicide. While this theme of self-destruction in man is hard to take, there is at hand a large accumulation of evidence suggesting that an even more invidious form of suicide may be operative in many human diseases, in which an individual develops antibodies that damage his own tissue and lead to disease and death. These diseases have been classified as "autoimmune diseases," but could be more fancifully described as "serologic suicide."

The conception that immunologic devices might be active in the production of disease is not a new one. Metchnikoff suggested this, but it was overpoweringly dismissed by Paul Ehrlich. His theory of "Horror autotoxicus" has prevailed for half a century, but now stands challenged.

Hematological Diseases

It was the demonstration that antibodies could develop in an individual and lead to the production of an hemolytic anemia that directed thinking toward the possibility that similar mechanisms could occur with other organs. Again, this was not a new conception, as Chauffard had demonstrated anti-red-cell antibodies in 1870, and many others had established the presence of similar substances in various forms of acquired hemolytic anemia. However, it was rarely possible to show their existence by prevailing techniques and not until methods were developed for demonstrating the presence of incomplete antibodies, was the common occurrence of these antibodies appreciated.

It is now established that a similar antibody mechanism plays an important role in the production of leucopenias. It has been known for a long time that drug-induced leucopenias were dependent on a similar mechanism, in which the drug was an essential part of the antibody. It is now known that in many leucopenias in which drugs do not play a part, antibodies can be demonstrated. Tullis was able to demonstrate in almost 75% of "splenic neutropenias" and all cases of Felty's syndrome he tested that an anti-leucocyte antibody was present. It was a frequent finding in Hodgkin's disease with neutropenia, and in aleucemic leucemias. Antileucocyte antibodies have also been demonstrated in various "collagen diseases," especially those cases which have been previously transfused with whole blood. These

were not related to the lupus factor, and showed no blood group specificity.

Anti-platelet antibodies now are well established as the important agent in idiopathic thrombocytopenic purpuras, following Harrington's dramatic demonstration that transfusion of plasma from cases of this disease into normal recipients produced the disorder in the latter. In addition, to this type of antibody, drug-dependent forms exist for platelets as well as for leucocytes. For example, sedormid purpura is associated with antibody that will lyse any platelets that have sedormid absorbed on them.

To date antibody has never been demonstrated in cases of bone-marrow failure to account for some of these cases. Banko found that "antibone-marrow antiserum" produced hemolytic anemia, but did not produce marrow aplasia, although some pyknotic changes were seen in these experiments.

Thyroid

The thyroid gland appears to be well established as an organ that can be and is damaged by anti-thyroid antibodies. Witebsky in 1956 and Rose were able to show that in rabbits, antithyroid antibodies could be produced, and that their production was associated with histologically demonstrable thyroid lesions. Roitt and his co-workers in the same year demonstrated antibodies to thyroid tissue, in many humans with Hashimoto's disease; and this was confirmed by Goudie et al in 1957. White, using fluorescent antibody techniques, showed that antigen-antibody combinations occurred within the thyroid follicles and within the epithelial cells of the thyroid gland.

In 1958 Witebsky using intradermal thyroid extract from the same species produced thyroid-specific antibodies and thyroiditis. Goudie also showed that in primary myxedema and in thyrotoxicosis antibodies could often be demonstrated against a thyroid antigen. This did not occur with euthyroidism, non-toxic goitre or carcinoma of the thyroid.

Using a more sensitive complement fixation technique Roitt and Doniach found that two antigens could be demonstrated; one associated with thyroglobulin, and the other with the microsome fraction of thyroid cells. In almost all cases of Hashimoto's disease, and in 83% of primary myxedemas positive reactions were found, and frequent positive reactions occurred in subacute thyroiditis, and in thyrotoxicosis. Normal individuals did not show these reactions and strongly positive tests were not encountered in nontoxic goitre, or in carcinoma of the thyroid. Owen and Smart confirmed these findings in primary myxedema.

A possible mechanism whereby antithyroid antibodies are produced has been demonstrated. Mumps virus has been shown to be a cause of acute thyroiditis; in one case as mumps subsided, antithyroid antibodies appeared, and the titre rose for

three months, then gradually declined. Unfortunately, this one case had thyrotoxicosis, which detracts somewhat from the demonstration.

Blizzard et al in 1959 reported similar findings in thyroid disease. They found that the incidence of antipenicillin antibodies was much higher in the group with antithyroid antibodies than in the group that did not have them, suggesting that those individuals produce antibodies readily to a variety of weak antigens.

Liver

Whether or not anti-liver antibodies play a role in the development of hepatitis remains uncertain. Such antibodies have indeed been demonstrated in lupoid hepatitis, and in other chronic hepatitis, as well as in macroglobulinemias where anti-organ antibodies are common. While these antibodies have been demonstrated mainly in gamma globulin fractions of the blood, some also appear to occur in alpha and beta globulin fractions.

Antibodies have been shown to be present in 50% of acute hepatitis, to disappear as the patient recovers, but to persist in cases that become chronic. However, the appearance of non-specific antibodies seems to be a feature of this disease; hemagglutinins against the red cells of chickens and of Rhesus macaca are found in acute phases of hepatitis and also in chronic hepatitis. Thus, while something unusual happens serologically in hepatitis, its nature remains obscure. Anti-liver antibodies are commonly found in such diseases as disseminated lupus erythematosus and macroglobulinemia, without hepatic involvement being demonstrable.

Kidney

As early as 1933 Masugi produced anti-rat-kidney rabbit serum which, when injected into rats, produced a membranous glomerulonephritis, and since then possible autoimmune mechanisms have been seriously entertained in this disease. McCaughey repeated this experiment in 1955 using anti-placental rat serum. Milazzo using tagged antibody found that it localized in the bone marrow where reticulin was abundant, and in the basement membrane of glomerulus, lung, placenta and adrenals. He suggested that it was really an anti-reticulin antibody. Cruickshank had found somewhat similar localization. Ortega and Mellors found the antibody in the glomerular tufts, where it remained for up to three months. In acute glomerulonephritis of humans, anti-kidney agglutinins increase in titre, paralleling the course of the disease. They were decreased following near-starvation diet for several days, this being taken as a vindication of Volhard's claim that fasting was effective treatment for this disease.

Other Organs

Little has appeared about the possible role of antibodies in the development of acute pancreatitis. Anti-insulin antibodies have been repeatedly de-

monstrated and appear to play a role in at least some cases of insulin resistance, although their implication in the causation of diabetes mellitus is uncertain.

Anti-lung antibodies have been demonstrated in pulmonary tuberculosis and in "virus" pneumonitis, without carrying strong conviction that any specific pulmonary disease can as yet be attributed to immune mechanisms.

In Addison's disease auto-antibodies against both adrenal and thyroid antigen has been reported. Lacrimal and salivary antibodies have been described in Sjogren's syndrome.

It seems likely that in sympathetic ophthalmitis, autoimmune antibodies may be operative. Delayed-type of skin reaction to choroid pigment appears in persons with eye injuries. Sympathetic ophthalmia appears to require a puncture wound of the eye, as it does not occur with intrinsic ocular disease. Possibly an external source of antigen acts as an "adjuvant" in the process.

Antibody can be produced against lens tissue. Burky in 1930 produced experimental "phaco-anaphylactica" in rabbits using rabbits sensitized to lens tissue, using a staphylococcus filtrate as an adjuvant. However, others have not been successful in producing lens lesions by injecting such antibody, and no good evidence that such mechanism operates in production of some cataracts has been forthcoming. An attempt to use such antibody to produce "chemical extraction" of cataracts was unsuccessful.

Experimental immunization with testicular antigens leads to the destruction of germinal cells and aspermia, but there is no known relationship between this mechanism and human infertility.

The possibility of serological factors in the production of central nervous system disease such as multiple sclerosis, post-infectious demyelinating diseases and the Guillain-Barre syndrome has been entertained. It is possible to produce experimental diseases of a similar nature with repeated injections of white matter from the brain, and Rivers, using acid fast bacilli as an adjuvant was able to produce the lesions with even one injection of such material. The antigen responsible may be a lipoprotein, but the relationship of human disease to such a mechanism is sub-judice.

In rheumatoid arthritis anti-human-globulin antibodies are frequently present, and are the basis for several tests now in vogue, such as the Latex and Bentonite tests. It is quite possible that rheumatoid arthritis will turn out to be produced by auto-immune mechanisms. The rheumatoid factor, which appears to be related to the duration of the disease more than to its severity, is found in the gamma-globulin peak, and can be separated from the main gamma-globulin fraction. It is not specific, occurring in other diseases. Attempts to produce rheumatoid arthritis have had variable success.

Trauma of various kinds has produced arthritic lesions in animals, and Selye propounded his theory of diseases of adaptation on this form of experimentation. Favour and others using heterogeneous synovia with and without adjuvants found that the production of lesions was nebulous and not reproducible. It is interesting to note that a rheumatoid-like syndrome occurs in about 50% of cases of congenital agammaglobulinemia.

Acute rheumatic fever may also fit into the category of dysimmune disease. Cavelti has described antihuman heart antibodies here; autoantibodies against hyaluronic acid of the connective tissue ground substance has also been recorded.

Antibodies to gelatin, previously considered to be a very poor antigen, have been shown to be present in the serum of some individuals, especially in those with degenerative joint disease, but it is not statistically convincing.

While antisera prepared against "aortic tissue" produces various necrotic lesions of the aorta, endocardium and renal capillaries, it has not been seriously suggested that this mechanism is important in the production of vascular lesions in the aorta.

Anti-organ antibodies are very commonly present in disseminated lupus erythematosus and in other members of the "collagen" group. Gadjusek has recently reported on these findings. The "LE cell" phenomenon itself is regarded as evidence that these individuals form serum factors leading to the destruction of nucleoprotein, and an antibody against nucleoprotein has been found. However, antibody in the gamma globulin fraction of serum in these patients is active against a wide variety of tissue antigens. It is interesting to note that familial hypergammaglobulinemia is common in the families of patients suffering from DLE.

The muscular atrophies might also be seriously considered as candidates for this pigeon-hole, but to date no reports have appeared on this matter.

Green has ascribed immunological roles in the control of normal organization and regulation of tissue growth. This may go awry in malignant diseases, such as cancer. Graham and Graham suggest that immune mechanisms play a role in the spontaneous regression of tumors, and much work is in progress on antibody formation and resistance to transplantation of tumors, and indeed to the possible role of infectious agents in the causation of these lesions. Perhaps "cancer" will turn out to be the antithesis of the autoimmune diseases where a failure to provide normal anti-tissue antibody leads to the development of neoplasia, but one doubts this.

Finally, the development of antihormone and anti-enzyme antibodies must be considered. Apart from insulin and thyroglobulin, there is no convincing evidence that antibodies normally develop against homologous hormones, although it is a

possibility. Nor is there evidence that anti-enzyme antibodies develop, although the demonstration of such a situation would open up many possibilities. However, it is unlikely that such antibodies would have any effect on intracellular enzymes, as antibodies probably do not gain entrance to the interior of living cells.

Possible Mechanisms in the Development of Autoantibodies

Until more is known about how an organism knows what substances to treat as antigens and what not so to treat, the development of autoantibodies will remain somewhat surprising. The work of Barnett and others strongly suggests that the fetus in utero learns to recognize, immunologically, its own protein because it is exposed to the protein, and does not develop antibodies to such proteins. Indeed, foreign proteins introduced to the fetus leads to failure of antibody development in that animal when it is exposed to the protein after its birth. Possibly, therefore, some organisms "forget" what proteins it had previously encountered. Such teleological explanations are not too satisfactory.

It is more likely that an antibody which is developed to a protein may attack other protein which is similar in configuration to the antigen. For example, it has been suggested that in acquired acute hemolytic anemias with anti-red cell antibodies, those with warm antibodies have a structure that attacks some configuration of mucoprotein common to the Rh group of blood group substances, whereas those with cold antibodies attack a configuration common to the ABO group. Another possibility is that while an antibody is developing to an exogenous antigen, some tissue protein from the individual becomes associated with the antigen, and subsequently functions as a hapten, so that antigen-tissue protein combination may be attacked by the antibody. Lederberg has produced evidence that antisera contain antibodies which react with antigen, and other antibodies that react with antigen-antibody complexes, so that antibody present in tissue that combines with antigen may be attacked by this antibody. Milgrom has shown that antibodies per se may become denatured in the body, and then act as antigens, thus rendering haptens carried by them antigenic.

Finally, much more needs to be understood about the role of "adjuvants" in increasing the sensitivity of tissues to the development of antibodies that will attack them.

In any case, it seems likely that there are individuals that develop antibodies readily to antigens that normally are very weak antigens. It is probable that these are the individuals that are more likely to develop autoimmune diseases.

Critical Evaluation

The above evidence that antibodies can be demonstrated in the serum of many patients with

a variety of organ and system diseases is impressive. While many reports show the results of carefully run controls, many others do not, which detracts considerably from the value of their observations. The lack of specificity for organs and species is also impressive. However, the main criticism is the utter vagueness of just what the antigen might be. In most reports, the tissue in question is extracted with saline, and this is the "antigen." To identify the possible types of protein present in such a preparation would be a biochemist's nightmare. Until more definitive methods can be employed, the value of such experiments must be open to serious question.

In one interesting study, a series of cases of DLE, macroglobulinemia, and cirrhosis of the liver were shown to have complement fixation antibodies against a wide variety of human tissue "antigens." At laparotomy biopsy of spleen, liver and muscle were removed. The individuals did not have positive complement fixation tests against their own organs, but did have against each other's organs.

It appears to be well established that the pro-

duction of antitissue antibodies is an important factor in the production of certain hemolytic anemias, thrombocytopenias, and leucopenias, and in many cases of thyroiditis. It is possible, but not yet proven, that similar mechanisms may play a role in the development of other diseases.

Autoimmune disease has the following characteristics:

1. Often precipitated by infection, drug or immunization procedure.
2. Tends to be specific for one tissue, or one organ.
3. Antibodies can be demonstrated in the serum of such patients which attack the organ or tissue in question.
4. Hypergammaglobulinemia is present, and usually is associated with positive nonspecific flocculation tests such as the thymol turbidity and flocculation tests.
5. Marked clinical improvement occurs when antibody formation and/or reaction with antigen can be inhibited by adrenal steroids, nitrogen mustards, etc.

Psychiatry

Hypnosis Today

J. Matas, M.D.

A cursory examination of both medical literature and lay magazines indicates that there is a general increase of interest in medical hypnosis. The use of hypnosis in dentistry and in dealing with various medical problems is becoming widespread. This movement seems to have begun after World War II and is gaining momentum.

Prior to this era, some psychiatrists used hypnosis to a minor degree, few did so to any extent. The only other area in which it was studied, was in psychological departments of universities. The present revival of interest has nothing or very little to do with psychiatrists or psychologists. The people mainly responsible for the restoration of interest in hypnosis are the ones concerned with its use as a means for controlling pain. The dentists have a great deal to do with it, as also have gynaecologists and obstetricians.

In our community a few dentists have been using hypnosis for some time, but the medical profession is just beginning to show an interest in it. In contrast, Cleveland, with a population about twice our own, has a Society of Clinical Hypnosis, to which 70 people belong. In a recent article in *Life* magazine¹, it was stated that nine hundred American doctors, dentists and psychologists have been employing hypnosis to help their patients. This must be a gross understatement. In Chicago, in October 1958, there were two meetings of hypnotic societies. The Society for Clinical and Experimental Hypnosis has

been in existence for ten years and attracted 431 persons. The other society, The Society for Clinical Hypnosis, has only been in existence for one year, and it attracted 600 persons. This indicates that there are many more people than is generally realized using this tool.

In the United Kingdom hypnosis now has official medical status. The state medical service has agreed to pay the fees of hypnotists used instead of anesthetists during childbirth. In 1952, the Hypnotism Act was passed in Great Britain controlling stage performances. Attempts have been made to do the same in various states of the United States, but lobbying has made this impossible. However, recently, the American Medical Association endorsed hypnosis as a therapeutic aid for doctors and dentists properly trained in its use².

Hypnosis is older than medicine as we know it. It was used three thousand years ago by Hindu priests in their religious rites. Hippocrates used it to induce sleep in his patients. Mesmer introduced what was called animal magnetism into the Western World in 1766. He thought that trance was induced by some sort of magnetic fluid passing from the operator to the subject. He was investigated by a Commission in Paris where he was practising, and in 1789 was rejected. This caused the first decline in interest in hypnosis in the Western world.

Interest rose again in 1829, when a Paris surgeon removed a cancer with the help of hypnosis. It was about this time that James Esdaile, a British

surgeon working in India, performed 300 major operations and thousands of minor ones under hypnosis. He offered to read a paper at the Royal College, but his offer was refused. His book describing his experiences with hypnosis, originally titled "Mesmerism in India," has recently been republished, and is now called "Hypnosis in Medicine and Surgery"³. It was originally published in 1850.

At the meeting of the Society for Clinical and Experimental Hypnosis in October 1958, in Chicago, a film was shown of a thyroidectomy, which had been performed entirely under the influence of hypnosis. There were no pre-medications, sedation or any other analgesic agents used during the operation, before, or following it. A description of this case is published by Dr. Kroger in a supplement in Esdaile's book³. Thyroidectomies would have been done this way many years ago, except that the introduction of clinical anesthesia, in the middle of the 19th century, brought on the next decline of interest in hypnosis.

The next peak of interest was between 1860 and 1910. It was just before this time that James Braid, a Manchester surgeon realized for the first time the role of suggestion in hypnotism. It was he who coined the word "hypnosis," and his name is given to an induction technique in which one holds a bright object some inches above and in front of the subject. The interest spread to France, where the neurologist, Charcot, took cognizance of it. He thought hypnosis was a pathological phenomenon, and only people who are hysteric could be hypnotized. However, this contention was later proven to be incorrect. It became clear that being hypnotizable is a normal trait.

In 1880 Breuer, who was associated with Freud in his early work, stumbled onto the fact that people can recall things under hypnosis better than they can in the waking state. Up until this time therapeutically hypnosis had been used entirely as a symptom removal technique, but Breuer paved the way to using hypnosis as a means of investigating the dynamics of symptoms. Freud was interested at first, but later rejected this technique in favor of his free association method. Over the years his influence has been tremendous and has helped relegate the use of hypnosis to the stage and the charlatan.

What hypnosis is, exactly, no one knows. It is entirely a subjective state, as there are no physiological criteria by which it can be differentiated from the normal waking state. Pavlov⁴, and many others thought it was a state akin to sleep but the E.E.G. and other physiological tests have proven otherwise. In the sleep state the E.E.G. is very much different than in the waking state, but in a hypnotic trance the E.E.G. does not change⁵. The one thing which is agreed on is that hypnosis is a state of exaggerated suggestibility⁶. Most hypnotists agree that all phenomenon seen in hypnosis

can be induced to a lesser degree by suggestion in the waking state⁶.

In discussing the physiological changes that take place in hypnosis it is necessary to keep in mind the difference between the physiological changes in the hypnotic state per se, which, as indicated above, are nil and those which occur as a result of suggestion. By the latter it is not meant that changes in the body can occur as the result of direct suggestion given that they should occur. For example, it is possible to increase the heart rate as a result of direct suggestion that it beat faster, but it is easier to have the heart rate increase by asking the patient to imagine himself in a frightening situation⁷. Even when the acceleration seems to occur as a result of direct suggestion, most of the evidence indicates that there is an emotional change which accounts for the acceleration⁸. Currently some investigation is going on into the physiological aspects of hypnosis in the Physiological Department of our University.

If it took as long to learn to hypnotize as it does to learn to play the piano, or even skate, ski or dance, it is likely that hypnosis would have had a better status than it has had in the recent past and even today. Because it is so easy to learn and it can be such a powerful tool, it lends itself to abuse by the stage hypnotist, by your next door neighbor, and even by boys at school. This no doubt has had an effect on the attitude of professional people. It is associated with showmanship, stage hypnotism, magic, rather than the usual associations related to a medical technique.

Currently, some leaders in the field are emphasizing that a person should have a year of training before practising hypnosis⁸. This year would only in small part be devoted to learning techniques of induction. The greatest part would be spent in learning dangers, limitations and psychology. Only in this way, they say, can one use hypnosis intelligently. However, in actual practice these people do not carry out their preaching. One of the features of the American scene and recently of the Canadian scene are three day courses which are supposed to qualify one to practice hypnosis. There are a number of groups giving these courses which are usually advertised by circulars sent to the medical and dental professions. Some Universities have sponsored these groups because of the difficulty of obtaining training otherwise.

Aside from groups such as these, individual members travel and hold courses of two or three days on their own. This has official disapproval, being considered an inadequate type of procedure. Some doctors take their training from stage hypnotists. There is one in particular who has trained many doctors, and they are quite pleased with him. He even teaches psychotherapeutic techniques to the satisfaction of some of the doctors.

It was quite evident at the meeting and the course, held by the Society for Experimental and

Clinical Hypnosis, in October 1958, that the revival of hypnosis as a medical tool has taken place outside of psychiatric circles. There were only two psychiatrists taking the course, and of the hundred or so people at the meeting giving papers and taking part in discussions there were only five psychiatrists. There were 25 Ph.D. psychologists and 56 M.D.'s, mainly general practitioners, gynaecologists and obstetricians and one anesthetist. As a corollary to this the American Psychiatric Association in 1957 did not have one paper delivered on hypnosis. In the January number of the American Psychiatric Association Journal, there is a review of the important work done in the previous year, and hypnosis has not been mentioned once in the past few years.

On the three day program of the meeting mentioned above, the neuroses were the subject of only one panel, and they had a psychiatrist taking part in this panel. It might be asked what the papers were about if the neuroses were not mentioned. As has been indicated above, the main area of use discussed by most speakers was in the control of pain.

Dr. Kroger, who practices obstetrics and gynaecology in Chicago and uses hypnosis a great deal, particularly in obstetrical work, was kind enough to hold a training session of pregnant women, before the people taking the course. He hypnotizes his patients in groups. Beginning about their 6th month, he holds meetings about twice a month, of prospective mothers and their husbands. He induces trance in four or five patients at a time while the others with husbands and friends look on. It takes a few sessions before the patients are trained sufficiently to carry through delivery. Some of the women who had undergone this experience had found delivery under hypnosis easier than their previous deliveries, and were grateful to Dr. Kroger for having used this method. He pointed out that only 25% of women can get along with hypnosis alone as the analgesic. The others need the chemicals to supplement. He describes his technique in a supplement in "Hypnosis in Medicine and Surgery"³.

Hypnosis is used a great deal in obstetrical practice in Chicago because DeLee has long advocated hypnosis as the ideal anesthetic for delivery⁹. As a result, there are many enthusiastic practitioners of this art amongst the obstetricians and gynaecologists in the Chicago area.

The anesthetists who spoke at the course were conservative in their outlook, and felt that certain instances, particularly bad risk cases, made the learning of this technique worth while. However, they kept emphasizing that it was not a substitute for chemical anaesthesia.

Aside from its use as a pain controlling technique, there are many psychiatric and medical conditions in which hypnosis is said to be useful. It is being tried in cases of psychological vomiting, insomnia,

asthma, obesity, eczema and alcoholism. Successes are being reported, but in these and other conditions, its place in a therapeutic program is still uncertain.

The enthusiasm of some of the speakers at the course and meeting mentioned above, was difficult to understand. After all, hypnosis is a technique, useful amongst other techniques, but that is all. Some of the people who had used hypnosis for a great length of time were still evangelical about it. These included some of the psychotherapists, both psychiatrists and psychologists. They talked about it as competing with psycho-analysis. This, is also difficult to understand, as psycho-analysis is a great deal more than the interviewing technique of free association. The fact of the matter is that hypnosis is a technique that can be used in many types of psychotherapy-directive, non directive, re-educative or exploratory, etc., but aside from the increased suggestibility, its only value in psychotherapy is that in some instances it facilitates recall and the elucidation of unconscious material. It is therefore, one of the interviewing techniques, and that is all that can be said about it.

Jules Masserman¹⁰, points out that most students of hypnosis go through three stages: "Oh posh," "Oh gee," "Oh well." Many of the speakers and many others who were attending seemed to have stayed in the "Oh gee" level of development.

These enthusiasts are the ones who are going to set going the next period of decline of interest in hypnotism. For example, a young doctor was heard to say that he had cured impotence in an eighty year old man, by means of two or three hypnotic sessions. This was a casual statement made in private conversation. However, Dr. S. J. VanPelt¹¹, has an article on how to be 100 by hypnosis. Dr. VanPelt is the president of the British Society of Medical Hypnotists. In this article he states: "hypno-therapy is the only way of insuring real relaxation and freedom from worry." To prove what he says is true he cites a number of cases. One of which was a man of 40, who, because of a family history of coronary disease began worrying that he would develop coronary disease. "Hypno-therapy was able to remove his fears," and to prove that hypno-therapy can prolong life, he makes the following statement: "Undoubtedly Mr. A. is more likely to reach 100 than when he was frightening himself into an early grave." Another excerpt from the same article: "Hypnotism can cure bad habits which are a menace to longevity, alcoholism, excessive smoking and over-eating." No references, follow-up, etc., were given. There are of course, many first rate writers on hypnosis, but unfortunately, much of the literature devoted to hypnotism is not on the same level as most medical writing.

A vexing problem in medical hypnosis today is that of symptom removal. Many general practitioners resent the warnings given by psychiatrists and

psychologists that symptom removal may be dangerous. They feel that a good deal of any doctor's life is spent in eliminating symptoms, and they cannot see that the danger of removing them by hypnosis is greater than relieving a headache by giving aspirin. The warning is given because the symptom may be playing an important role in maintaining a pathological personality's compensation, and if suddenly removed a serious decompensation may result and a psychotic break or other severe type of psychiatric illness may occur. There is one reference in the literature¹², to a psychotic break which occurred shortly after a generalized neuro-dermatitis was removed by direct hypnotic suggestion. Many people who use hypnotic suggestion in this way feel that this is an exceptional instance, and they do not believe hypnotic suggestion capable of so overcoming the protective function of a symptom. This may well be the case, but it is probably not wise for dentists who learn to do hypnosis in order to do hypno-anesthesia to treat thumb sucking and other habits involving the oral cavity. There are of course, tics and spasms which persist long after their purpose has been accomplished and continue out of habit. These can respond very quickly and very well with symptom removal techniques. However, if the symptom is still serving some purpose in helping the individual deal with his anxieties, removing symptoms only exposes him to the full blast of his anxiety. It was to deal with his anxiety that the patient developed the hysterical or phobic symptom.

Modern psychotherapy attempts to review the patient's life events in a setting which is of course, different from that in which they originally occurred, and by doing so, remove the inhibiting, traumatic effect of these events. It is apparent that a technique which offers only increased recall and increased suggestibility cannot in itself do this.

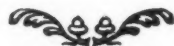
Modern Medicine owes many things to hypnosis. Freud did psychotherapy with hypnosis before developing his free association method. Psychosomatic thinking stems, to some extent, from studying the effects of hypnosis. It naturally followed that if you could cure or relieve illness by psychological means, psychological factors could cause illness. It

is quite possible that hypnosis may in this age really get many medical practitioners interested in psychological problems. Certainly, many are showing this interest through their interest in hypnosis. It is likely that many practitioners feel more comfortable using a technique such as hypnosis rather than just listening to a patient lying on the couch, or talking to the patient face to face. It probably gives the therapist a feeling of greater security than the less structured procedures which are usually used in psychotherapeutic interviews. There is a greater feeling of doing something, and if it works, the immediate results are sometimes more dramatic than those seen in psychotherapy ordinarily.

I think that we have probably been neglecting a useful tool. However, unless each person uses it within his own competence, and makes use of it only in the treatment of conditions he is trained to treat, it will again, after a period of popularity, fall into dis-use. Currently, we are in a period of rising popularity, but this could easily come to an end.

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Pediatrics

Pediatric Mortality at St. Boniface Hospital A Five Year Review† of Pediatric Deaths from 1954 to 1958

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This paper reviews the pediatric deaths which occurred at St. Boniface Hospital from 1954 to 1958 inclusively. By "pediatric deaths" is meant any baby who at birth weighed 750 grams or more, stillborn or liveborn, and who died before reaching his or her fourteenth birthday. Throughout this period, there were 33,382 admissions under fourteen years of age, including stillbirths and livebirths. In the same period there were 572 deaths, of which 186 were stillbirths. This represents an overall mortality of 17.1 per thousand admissions. The autopsy rate was 89.8%.

In addition to and separate from the above, there were 72 cases who died outside the hospital, en route to the hospital or within minutes of arrival; these are discussed, but for the purpose of this review are considered apart from the hospital statistics; they come under the heading of "dead on admission" (D.O.A.).

The material presented in this paper could probably be considered as a fairly true reflection of mortality in the pediatric age group because of the nature of St. Boniface Hospital. This hospital is a general hospital which handles all cases including neuro-surgery and congenital heart disease (indeed the first case of open-heart surgery in Manitoba in a child was performed at St. Boniface

Hospital). Transfers to other hospitals are minimal; the only routine transfers being cases of bulbar polio and of tuberculosis. The perinatal* mortality statistics — an area often fertile in errors of classification — are under the constant supervision of a single individual primarily interested in the problem. Also, for the years of this review, the hospital has taken part in the Winnipeg Perinatal Mortality Study: this means stillbirth and neonatal deaths have come under special scrutiny with respect to causes of death. All perinatal deaths are reviewed by both the Departments of Obstetrics and Pediatrics; all other pediatric deaths are reviewed by the Department of Pediatrics. The pediatric pathologist, who is also the head of the Department of Clinical Pediatrics attends all meetings thus enhancing correlation between the three departments.

Discussion of Hospital Statistics

It is apparent from Table I that there has been a steady and rather marked increase in admissions to the hospital. This involves both the perinate and general pediatric admissions and is related largely to expansion of hospital beds and additions of new wings. It is also apparent from Table II, however, that the overall mortality in the pediatric age group has shown a slight increase from approximately 16 to 18 per 1000 admissions. This increase is related to an increased perinatal rate** and particularly to an increase in deaths amongst liveborn prematures*** (cf. Graph 1) in a period when the premature rate was constant at 6.8 to 7%.

The perinate contributed heavily to pediatric deaths in this series; 67.8% of all deaths within the hospital in the years of the study were perinatal (Graph 1). In addition, more than half of both stillbirths and neonatal deaths were associated with prematurity.

Table I
Admissions — St. Boniface Hospital — 1954-58
PERINATE

Year	Stillbirth	Livebirth	Total Births	Non-Perinate	Total Admissions
1954	33	2,064	2,097	3,156	5,253
1955	32	2,285	2,317	3,451	5,768
1956	36	2,524	2,560	4,370	6,930
1957	42	2,954	2,996	4,761	7,757
1958	43	2,964	3,007	4,667	7,674
Total	186	12,791	12,977	20,405	33,382

† Aided in part by a Dominion-Provincial Health Grant No. 606-7-19.

* Perinate is here defined as any baby, whether stillborn or liveborn who weighed 750 grams at birth and, if liveborn, who died before the end of the 7th post-natal day (7 x 24 hours).

** The perinatal mortality rate is here derived from the following formula:

$$\frac{\text{Total neonatal deaths (750 Gms.+ and 7 post-natal days)} + \text{total stillbirths (750 Gms.)}}{\text{Total livebirths (750 Gms.)} + \text{total stillbirths (750 Gms.)}} \times 1000$$

*** Premature includes all babies weighing 750 - 2499 grams at birth.

Table II
Mortality Statistics—St. Boniface Hospital—1954-58
 (Figures do not include D.O.A.'s)

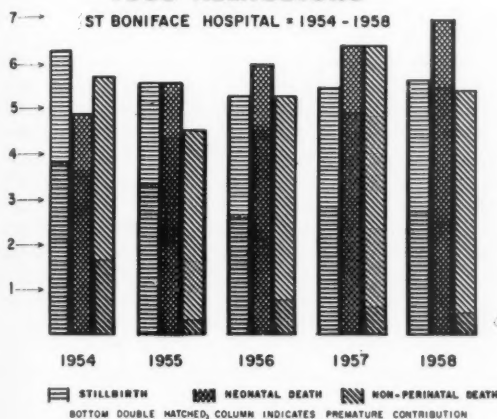
Year	PERINATE			*Perinatal Mortality	Non-Perinate	†Non-Perinatal Mortality	Total Deaths	‡Total Mortality (Hospital)
	Stillborn	Neonate	Total Perinatal Deaths					
1954	33	26	59	28.1	30	9.5	89	16.9
1955	32	32	64	27.6	26	7.5	90	15.6
1956	36	42	78	30.4	37	8.4	115	16.5
1957	42	49	91	30.3	49	12.9	140	18.0
1958	43	53	96	31.9	42	8.9	138	17.9
Total	186	202	388	29.8	184	9.0	572	17.1

*Per 1,000 deliveries.

†Per 1,000 non-perinatal admissions.

‡Per 1,000 admissions, including stillbirth and livebirth within the hospital.

STILLBIRTH, NEONATAL AND NON-PERINATAL MORTALITY PER 1000 ADMISSIONS



These statistics indicate clearly in which direction pediatricians should direct their efforts if pediatric mortality is to be appreciably reduced. They also indicate the very intimate relationship between the disciplines of obstetrics and pediatrics and the need for continued and relentless co-operation and research by these two departments. Without each other the obstetrician and the pediatrician are helpless when it comes to reducing perinatal mortality; in this hospital, and from the experience detailed in this review the pediatrician looks to the obstetrician to reduce the 50% of perinatal deaths that are stillborn and the obstetrician looks to the pediatrician to help salvage some of the 75% of neonatal deaths that are premature, to say nothing about the full term neonatal death; both are in some way involved in as many as two-thirds of all pediatric deaths under 14 years of age.

Discussion of Autopsied Cases

There were 586 autopsies performed by the pediatric pathologist at St. Boniface Hospital in the five year period 1954-58. Of these, 514 were on patients who died within the hospital; the remaining 72 autopsies were performed on patients who died outside the hospital, or within minutes of arrival. The discussion of the causes of death therefore does not involve quite the same statistics as were discussed previously for hospital deaths.

In all there were 572 hospital deaths; of these 514 were autopsied giving an autopsy rate of 89.8% cf. Table III. The deaths in whom there was no autopsy are not included in the statistics of causes of death.

Table IV details the causes of death. It is important to point out that there are 668 causes of death as against 586 patients who died; the reason for this is that there were 82 patients in whom two or more major causes of death were present; in 80 of these there were two major causes while in two others there were three.

As expected congenital malformation of a major degree was more frequently involved with another major cause of death; there were 36 patients with a congenital malformation deemed incompatible with life who showed another major cause at death and in 27 of these the other major cause was infection. Also as expected, infection was the other major cause in 43 of the 82 cases with multiple major causes.

Table III
Autopsies — St. Boniface Hospital — 1954-58

Year	Total Autopsies	D.O.A.	Total Hospital Autopsies	Percentage of Hospital Deaths Autopsied
1954	86	16	70	78.6
1955	92	12	80	88.0
1956	121	14	107	93.0
1957	144	12	132	94.3
1958	143	18	125	90.5
Total	586	72	514	89.8

Table IV
Causes of Death in 586* Autopsied Cases
St. Boniface Hospital — 1954-58

	Perinate	Non-Perinate	Total
Infection	60	142	202
Deficiency States (including Anoxia)	108	9	117
Congenital			
Malformations	47	38	85
Trauma	30	35	65
Hyaline Membrane Syndrome	42	1	43
Degenerative Disorders	2	13	15
Tumor	0	14	14
Hemolytic Disease of the Newborn	11	1	12
Metabolic Disorders	0	10	10
Unknown:			
(a) Maceration	75	0	75
(b) Indefinite	24	6	30

* The cases discussed in Table IV concern all the autopsies performed by the pediatric pathologists whether the patient was admitted and died within the hospital or whether he or she died at home and the autopsy was performed elsewhere.

Infection leads the list as major cause of death being seen in 202 patients of which 142 were non-perinates; in approximately one-third of these cases the lungs were the major organ involved. The organisms more frequently found at autopsy were the staphylococcus and E.Coli, these being found in approximately equal numbers of cases; all other organisms are of considerably lesser importance. Virus studies were performed in quite a few cases, but only rarely was a virus identified as a cause of death.

The deficiency states include anoxia, and under anoxia are grouped intraventricular hemorrhages of the premature; this explains to a considerable degree the relatively high figure of 108 deaths due to deficiency states in the perinate.

Congenital malformations were the major cause of death in 85 cases, these being approximately equally distributed in the perinate and non-perinate; in these 85 cases, a malformation of the C.N.S. was the major feature in almost half of the cases.

Trauma includes intracranial hemorrhages of the newborn where there is damage to the brain or its coverings, and also cases of poisoning, operative deaths and other accidents such as burns, drownings, automobile accidents.

Degenerative disorders concern dystrophic changes in the C.N.S. mainly; some of these could probably be referred back to anoxia in the perinatal period but they are not included amongst that group.

A review of the autopsies on patients who were dead on admission is of some interest. There were 31 cases grouped under the heading of sudden unexpected death where the patient was unexpectedly found dead at home after no illness or at most a minimal and very early illness; in these 31 cases infection was believed to be the major cause of death in 30. Sixteen of the D.O.A.'s were due to accidents and almost three-quarters of these were traffic accidents, mostly in patients older than 3 years of age. Congenital malformation was found in 6 cases and in nearly all of these the malformation concerned the cardiovascular system.

Summary

A five year review of 586 pediatrics deaths going to autopsy at St. Boniface Hospital has been presented.

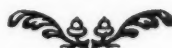
Of the 586 autopsies, 514 concerned patients delivered in hospital or who died after admission.

There were 33,382 pediatric admissions to the hospital during the period under discussion, including 12,791 livebirths and 186 stillbirths; in the same period there were 572 hospital deaths with an autopsy rate of 89.8%.

Those deaths in which there was no autopsy are not included in the discussions of causes of death; experience has shown that there is too often a serious discrepancy between the clinical and pathological diagnosis to warrant inclusion of these cases.

Infection was the main cause of death in this series; this was followed by deficiency states (mainly anoxia), congenital malformations, trauma, and the hyaline membrane syndrome, in that order. The causes of death are grouped as to whether they occurred in the perinatal or in the non-perinatal period.

The salient feature of this review was the fact that the perinate contributed two thirds of all deaths under 14 years of age beginning with a birth weight of 750 grams. This emphasizes again the intimate relationship between the two disciplines of obstetrics and pediatrics.



Radiology

The Indications for and the Uses of Angiocardiography

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Angiocardiography is a specialized diagnostic X-ray procedure most frequently used in the investigation of congenital heart lesions. It is also useful in evaluating anomalies of the aorta and pulmonary arteries and their branches. Less frequently it is used in investigating pulmonic and mediastinal lesions. The present communication will be largely limited to the use of this method in the diagnosis of congenital heart disease.

It is less than 30 years since the origination of this form of examination, and with rapid recent advances in cardiac surgery widespread use of angiocardiography has come into being.

Forsmann in 1929 passed a ureteral catheter through the veins of his right arm until the tip lay within his right atrium. At a later date he reported on the injection through the catheter of a radio-opaque organic iodine compound (Uroselectan), and an X-ray film was exposed but due to technical difficulties the resultant film was worthless and the attempt was abandoned.

By 1938 Robb and Steinberg, working at Bellevue Hospital, had reported on injection in 123 subjects without serious consequence. The fundamental methods and techniques they devised have continued down to the present day with some modifications. The most noted recent addition has been the development by the Swedish workers of an accurate rapid biplane film changer capable of taking films as rapidly as 12 per second in two planes at right angles to each other simultaneously.

The indications for angiocardiography may be broadly stated as follows:

1. Cardiac conditions in which a precise diagnosis cannot be made by simpler, more readily available methods.

2. To differentiate between lesions which may be amenable to surgical correction and those that are not suitable for surgery.

3. To evaluate the type of surgical procedure to be considered.

Speaking more specifically this method may be considered as a supplementary procedure to be used in evaluating lesions in which there is a shunting of blood from the right to left side of the heart and in the so-called admixture lesions (or bi-directional shunt) in which there is a mixing of arterial and venous blood either within or outside of the heart—so-called cyanotic congenital heart disease.

Cardiac catheterization usually gives more information in congenital heart lesions in which there

is a shunting of blood from the left to the right side of the heart—acyanotic heart disease. However, angiocardiography may be used in conjunction with catheterization and this procedure known as selective angiocardiography is particularly useful in older children and adults where it is difficult to get a sufficiently large bolus of contrast into the heart by injection of contrast via a peripheral vein.

It should be emphasized that the correct evaluation of a suspected congenital heart lesion frequently requires a multiplicity of examinations and that close co-operation should exist between all clinicians involved in any given case. The history, physical examination, E.K.G. tracings, plain x-ray film and fluoroscopic findings should be correlated and evaluated. Gasul has stated that with these procedures it should be possible to arrive at a correct diagnosis in over 70% of congenital heart lesions.

In those cases in which a diagnosis has not been made or in those in which more definitive information regarding the exact site of the malformation is required then more complex methods such as cardiac catheterization, angiocardiography, dye dilution curves or left heart catheterization may be indicated.

Angiocardiography may be 1. Peripheral.

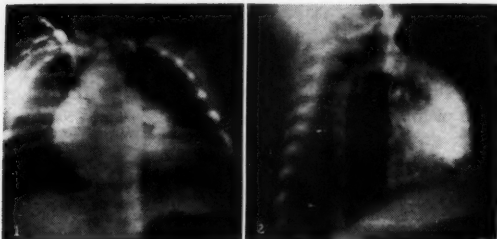
2. Selective.

In peripheral type the selected contrast is injected either through a large bore cannula or a polyethylene tube into a peripheral vein, usually in the left arm (to evaluate possibility of left s.v.c.) although successful injections have been carried out also via a jugular or femoral vein. We have used mostly Urokon 70% - 1.0 - 1.2 ccs. per kgm. of body weight. In other centres such contrast media as Diodrast, Renografin and Hypaque have been utilized. Regardless of the contrast used, it is of the utmost importance to get the media in as quickly as possible to provide the greatest amount of contrast in the cardiac chambers.

In selective injection a cardiac catheter is advanced into the heart via the superior or inferior vena cava under fluoroscopic control and the exact site of injection can be predetermined.

In both methods it is necessary, for best results, to have radiographic equipment which will permit multiple rapid exposures. The Iluma rapid film changer that we use has proven highly satisfactory as it permits exposures as rapid as 12 per second in 2 planes. It also has a pre-selector switch which allows three different variations of exposure. For example, we frequently use the following settings: (1) 6 per second for 2 seconds, (2) 2 per second for 4 seconds, (3) 1 every 2 seconds for 6 seconds.

When properly selected the mortality rate is less than 1%. Gasul reports 2 fatalities in 900 examina-



tions (.22%) in the past 7 years. Dotter in reviewing 6824 cases up to 1949 found 26 deaths reported (.37% mortality). The major hazard is that inherent in the nature of the contrast medium used and there is still a great need for a safe medium.

The following cases illustrate some of the salient features demonstrated by angiocardiography.

Case 1 Figures 1 and 2.

3-week old male infant with complete transposition of the great vessels. In this instance the aorta arises from the right (anterior) ventricle and the pulmonary artery from the left (posterior) ventricle. A shunt is necessary between the right and left side of heart to maintain life. The A.P. and lateral projections show the contrast material (70% Urokon) passing directly from the right atrium and right ventricle into the aorta without any opacification of the pulmonary artery.

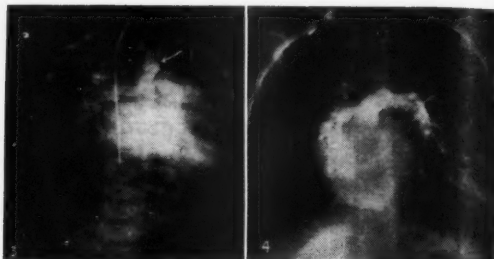
Case 2 Figure 3

Persistent common atrio-ventricular canal. In this congenital defect there is premature arrest in development in which auricular and ventricular septa fail to meet. The tricuspid and mitral valves fuse but there are large defects immediately above and below.

Contrast material has been injected via a catheter into the right atrium and within one second there is opacification of right atrium, right ventricle, left ventricle and left atrium. The aorta (arrow) and pulmonary artery are filled with contrast material almost simultaneously. Delayed films showed all the chambers of the heart opacified and re-opacified up to and including 18 seconds. The lung vessels showed a great deal of contrast material.

Case 3 Figure 4

5-year old male with hypoplasia of right pulmonary artery and poorly developed right lung. The right lower lobe is collapsed and the right middle and upper lobes are poorly vascularized. There is



herniation of the left lung across the mid line above the heart into the right hemithorax.

Angiocardiogram demonstrates the large left pulmonary artery with a well vascularized left lung and the diminutive right pulmonary artery with rudimentary development of its peripheral branches.

With the rapid development of corrective surgical procedures now occurring, it is extremely important to arrive at as accurate a diagnosis as possible. Many heart lesions that were not considered for surgery a few years ago are now being attacked successfully. Congenital heart anomalies, which are not considered correctable surgically at present, may be amenable to treatment in the future.

Much experimental work is continuing and some of the newer methods give promise of taking a prominent place in the investigation of congenital and acquired heart lesions. Among these may be mentioned the work of Lester and his associates at the University of Minnesota, who by means of coronary arteriography have successfully visualized the coronary arteries in more than thirty patients without significant reaction. Stauffer at Temple University School of Medicine has used injections of CO₂ and in conjunction with image intensifier cinefluorography has obtained beautiful visualization of the right cardiac chambers in adults. His group is at present using CO₂ in combination with opaque contrast media to demonstrate results of supra-valvular pulmonic stenosis in dogs. Lehman of Philadelphia has recently reported on direct visualization of the left ventricle by insertion of a needle through the anterior chest wall on a series of 60 patients. Other workers have punctured and injected the left atrium via a bronchoscope and needle in the left main bronchus.

All or any of these newer methods may soon form a potent force in the clinician's diagnostic armamentarium.

Obstetrics & Gynaecology

Abortions

Rhinehart F. Friesen, M.D., F.R.C.S. (C)
Department of Obstetrics and Gynecology
Grace Hospital

Considering how common the condition is, our ignorance about the subject of abortions is truly remarkable. Our ideas regarding etiology are largely speculation. Our attempts at prevention are pathetically inadequate in spite of the enthusiasm which from time to time has accompanied the introduction of new methods of treatment. To produce an abortion (and one of the greatest fields of disagreement is in regard to the necessity for this) is far from simple. None of the drugs supposedly used by criminal abortionists are satisfactory, and even after dilatation and curettage pregnancies have been known to continue to term. When, for reasons usually known only to her, Mother Nature decides to terminate an attempted pregnancy, there are specific procedures by which we attempt to assist her. But even here it behooves us in true humility to remember that Mother Nature has had thousands of years of experience with this problem and that our bungling efforts may hinder more than they help. Perhaps our ignorance concerning abortions is best demonstrated by our inability to define the word adequately. Usually an abortion is defined as a pregnancy which terminates before an arbitrarily chosen period of gestation which has gradually been reduced from 28 to 26, 24, or even 20 weeks; the difficulty being that some abortuses, as thus defined, invalidate the definition by surviving. On the other hand, occasionally after a period of gestation considerably longer than this and perhaps even exceeding 40 weeks an abortus is produced which obviously did not develop longer than a few months.

Because of this surprising ignorance regarding such a common condition I recently reviewed the charts of all patients treated for abortion in three Greater Winnipeg hospitals during the year 1956, in hopes that I might clarify my own ideas somewhat. I must hasten to say at the outset that I made no startling discoveries; however, some of my findings and results of the reading I did in connection with this project might be of interest to a group of doctors like those gathered here today.

During 1956 in these three hospitals a total of 675 patients aborted. During the same time in these hospitals there were 8624 viable births. From this we can assume that at least 8% of pregnancies terminate as abortions. I say, "at least," because these are only those abortions which were treated in hospital, and we all know of others which we treated at home. In addition to these known cases there are many that do not come to the attention

of a doctor at all, either deliberately or because the patient herself may think she is merely having a delayed period. The determination of the true incidence of abortions has consistently foiled investigators. A recent United Nations publication estimates that somewhere between 20% and 70% of all conceptions are lost before the 28th week of gestation. Arpad Csapo of Johns Hopkins truly says, "The uterus is the main killer and crippler of mankind."

Our hospital records throw very little light on this interesting and controversial subject of the causes of abortion. It is usually said that the likelihood of abortion increases with age. In this series the patients averaged 29.5 years with a range of 16 to 47. It is also said that the likelihood of abortion increases with increasing gravidity. In this series the patients had had an average of 2.67 previous pregnancies, 0.66 of which had ended in abortion. The highest number of previous pregnancies was 16 in a patient of 36 who in 1956 aborted for the seventeenth time. C. T. Javert in his recently published book, "Spontaneous and Habitual Abortion," maintains that what initiates many abortions is decidual hemorrhage, and that the reason for the decidual hemorrhage is capillary fragility caused by a deficiency of vitamin C and bioflavonoids, roughly comparable to scurvy. He also emphasizes the importance of emotional factors. Atlee and his associates in Halifax, who are carrying out quite an ambitious research project regarding abortions, have published a preliminary report in the American Journal of Obstetrics and Gynecology of February 1957. In their study they have tried to find whether they could establish a causal relationship with a number of factors which have often been suggested as of etiological significance. The following summarizes some of their preliminary conclusions:

No Relationship Shown:

- Exercise
- Abnormal diet
- Deficient blood vitamin C
- Vitamin E deficiency
- Defective ovum

Possible Relationship Shown:

- Structural uterine defects
- Hypothyroidism
- Hormone deficiency (but therapy disappointing)
- Emotional factors

In the literature generally I get the impression that emotional factors are receiving more and more attention.

The duration of gestation was stated in our hospital records in most cases with the distribution as shown in Table 1. This distribution is like that usually reported.

Table 1
Duration of Gestation

0 - 4 weeks	1
5 - 8 "	73
9 - 12 "	278
13 - 16 "	162
17 - 20 "	78
21 - 24 "	28
25 - 28 "	12
29 plus "	8 (missed)

that is, with the greatest frequency at about 12 weeks. I would like to suggest, however, that this is not a true picture of the duration of gestation of abortions. If to these, which were treated in hospital, were added the cases treated at home and those undiagnosed, I am convinced the greatest incidence would be early in pregnancy with a continuous decrease as the period of gestation increases. The importance of this is that one can encourage a woman who is spotting from time to time that with each passing week her chances improve.

Diagnosis rarely offers much difficulty. It is true that occasionally the disturbing possibility of an ectopic pregnancy must be considered. The main diagnostic problem is to tell when to stop trying to save a pregnancy and expedite its termination: in other words to tell when a threatened abortion has become an inevitable one. If in doubt it is better to try to save the pregnancy. Severe cramps and bleeding heavier than an ordinary menstrual period make it doubtful that the pregnancy will continue. If any tissue is passed, or if the internal os is found to be dilating, there is no use trying to avoid an abortion. Friedman Tests were done in some of the cases reviewed but because this test depends on living chorionic tissue, it may remain positive after the abortion has become inevitable and even after the fetus has been passed.

Table 2

Type of Abortion	
Threatened	109
Inevitable	94
Incomplete	377
Complete	50
Missed	22
Septic	30
Habitual	13
Therapeutic	2
All Types	675

Table 2 shows the incidence of the different types of abortion or the stage they had reached at the time of admission. For purposes of this study habitual abortion was defined as one occurring after three previous successive abortions. The low incidence of therapeutic abortion indicates the good conservative practice in this regard prevailing in the Greater Winnipeg area.

With regard to treatment, I intend to restrict myself to the management of actual abortion and merely touch on that large and controversial subject, prevention. In discussing etiology I have

already mentioned the differences of opinion and implied that this led to similar differences in preventive treatment. In passing I would like to mention the reports which have been appearing recently of pseudohermaphrodite babies being born to women who had been treated for habitual or threatened abortion with large doses of progesterone. This effect is perhaps to be expected because chemically and physiologically progesterone is quite similar to the androgens.

Active treatment includes some way of emptying the uterus, supportive measures and replacement therapy for shock and hemorrhage, analgesics for pain, and chemotherapy for infection. One of the most interesting points is the difference of opinion that exists regarding the relative place of oxytocin versus mechanical evacuation. On the one hand those advocating medical measures say they are much less likely to disturb a viable pregnancy, avoid the dangers of an anesthetic, do not break down nature's barriers around a locus of infection, and avoid trauma such as perforation of the uterus, the production of the so-called incompetent cervix, and possibly permanent changes in the inside of the uterus. On the other hand those favoring early curettage claim theirs is the really conservative treatment in that it stops excessive blood loss, avoids insidious bleeding at home after discharge, cuts down the length of hospitalization, permits the woman to resume her reproductive function more quickly, and allows her to return to normal life and activity sooner. This last factor is an important consideration because the sooner she can forget the emotional strain associated with an abortion the better. In order to determine just how much time was saved by curettage I calculated the average length of hospitalization and got the results shown in Table 3.

Table 3

Average Duration of Hospitalization

Treated Medically	284 or 42% of cases	5.20 days
Treated Surgically	391 or 58% of cases	5.80 days

Contrary to my expectations it was the surgically treated cases who remained longer in hospital in this series, more than half a day longer. Thus the present series cannot be used to support the frequently made statement that curettage shortens the stay in hospital.

Because we associate abortions with hemorrhage let us next consider the matter of replacement therapy. Most of these patients had at least one hemoglobin estimation done. The lowest for each patient ranged all the way from 24% to 97% with most of them falling between 65% and 85% and relatively few below 50%. The blood transfusions given in this series has been made the subject of a separate paper but because it is the most important finding I would like to refer to it briefly at this point. 169 or 25% of these patients were given blood.

Table 4
Transfusions Given to Abortions

	Hospital "A"	Hospital "B"	Hospital "C"
Number of abortions.....	201	231	243
Cases given blood.....	24 12%	62 27%	83 34%
Number of bottles given	57	171	220

Table 4 shows a surprising difference in practice in the three hospitals with 12%, 27% and 34% of patients receiving blood, and the Blood Bank being called upon for nearly four times as much blood per patient at Hospital "C" as at Hospital "A". There were no readily apparent ill effects from the use of too little blood at Hospital "A", and in my opinion it would have been safer to use less at Hospitals "B" and "C". A blood transfusion is a more dangerous procedure than seems to be

generally realized. Death follows transfusion just as frequently as it follows appendectomy, and the potential permanent morbidity in the woman of child-bearing age is much greater than that from a McBurney incision. It should not be necessary to subject a woman to the risks of a transfusion just because her hemoglobin is rather low after she has had an abortion.

In conclusion, I have presented some of the findings from an analysis of a series of 675 consecutive abortions and some thoughts that were prompted by my reading in connection with this analysis. I realize that I have not covered the subject fully in traditional textbook fashion. My intention was to stimulate interest and perhaps further reading concerning a very common condition about which we are surprisingly ignorant.

Medical Memoranda

Case Report

Angiofibroma of Cervix: P. Goldstein, M.D., C.M., F.R.C.S. (Ed. & Eng.), F.R.C.S. (C), G. Steenson, M.D.

This case is worthwhile reporting, in that a rare tumor gave rise to unusual diagnostic difficulties during pregnancy.

Mrs. K. P., age 32, presented herself on 10th February 1958, stating that she was having a miscarriage, as she noted a mass protruding through the introitus on straining and for six weeks she had a profuse vaginal discharge, occasionally blood stained. Her last menstrual period began on 30 September 1957. She previously had two normal pregnancies in 1948 and in 1952, and a spontaneous abortion at 3 months gestation in 1956.

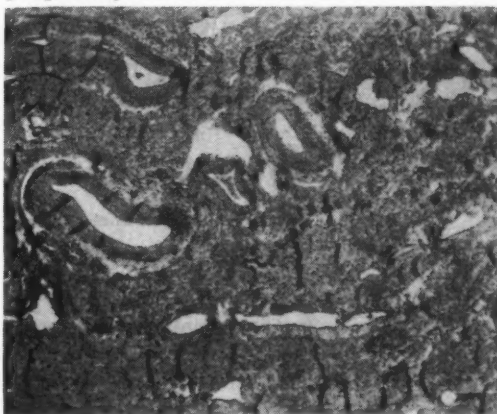
The uterus was enlarged commensurate with the duration of pregnancy. The vagina contained copious creamy discharge. The prolapsing structure was the anterior lip of the cervix, which appeared like a soft round mass. The remainder of the cervix was hypertrophied, with a patulous, but closed os. The impression was gained that this was a case of marked chronic cervicitis, with Hypertrophy of the cervix.

Cultures produced a heavy growth of Yeasts, E.coli, and coagulase positive staphylococci. The leukorrhoea improved after local treatment with antibiotic suppositories and 1% aqueous gentian violet. The patient was delivered normally on the 23rd of June 1958, after a short and easy labor.

On the 23rd of September 1958 a Manchester repair was performed. The vagina at this time was clean. The bulky anterior lip of the cervix was bulging through the introitus and there was a second degree cystocele and urethrocele present. The levatores ani were lax.

On incising the anterior vaginal wall, and when the flaps of vaginal mucosa were raised, a soft mass, well encapsulated, was easily shelled out of

the anterior wall of the cervix. This specimen consisted of a round fluctuant tumor 7 x 6 x 4.5 cms., and weighed 69 grams. The surface was smooth and covered by fibrinous adhesions. On section the tumor was pinkish white. A cystic area measuring 1 cm. in diameter was present peripherally.

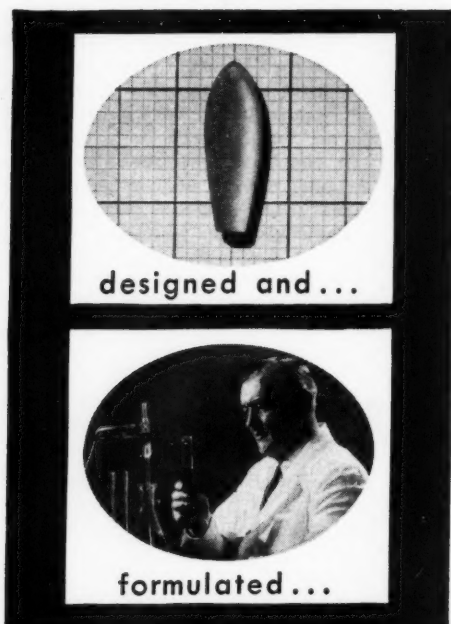


Microsection showed the tumor to be composed of adult connective tissue with numerous endothelial lined vascular spaces. Microscopic diagnosis was that of a cervical angiofibroma.

Whereas cervical fibroids are well known, and adenomata of the cervix arising from persisting mesonephric duct remnants have been described, we could find no previous description in the literature of an angiofibroma of the cervix.

Acknowledgments

We wish to express our grateful appreciation to Dr. M. B. Wall for his assistance in the care of this patient, and to Dr. D. W. Penner for the pathological interpretation of the specimen.



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
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CANADA

Medical History

Medicine in Mexico

L. A. Sigurdson, M.D.

In any paper with such a vague title as "Medicine in Mexico," or more properly "A Brief Summary of the History of Medicine in Mexico," numerous omissions and errors are to be expected. In this particular case, although I have had assistance from many sources, my lack of knowledge of the Spanish language was a great handicap and inaccuracies will no doubt be found. For these I take full responsibility. My interest in the subject was aroused when I went to a convention in Mexico City in 1957.

The country is beautiful and full of historic interest. The people are very helpful and friendly. It is probably the most interesting country in the new world. The Spanish, French and English were the three great nations that went to the new world, bringing with them their language, culture, religion and education. The Spanish were the first to arrive and they built hospitals and established medical schools. The Mexicans relied on them for their medical care for the same reason that Canadians later relied on the French, and still later, the Americans relied on the English.

Early Medicine

The story of medicine in Mexico is, perhaps, of more interest than the story of medicine of any country in the new world. This is the story that shows the gradual evolution from the primitive medicine man to the present day highly trained doctor. The medicine men were held in high esteem by the whole community. They sat in council with the chiefs and their opinions were held in high regard, not only for their knowledge of materia medica, but also for their skill in mysteries and magic, their control over the religious festivals, and their opinions on war and peace.

The Aztecs, with culture far beyond anything that existed in most places in the world, were aware of the specific nature of diseases and had a vast collection of medicinal herbs. They were so skilled in their use that Cortez wrote to Spain and said that there was no need to send out Spanish physicians.

Introduction of European Medicine

With the arrival of Cortez in 1520, the era of primitive medicine, as practiced by the medicine men, ended, for he brought two Spanish physicians with him. They were Lopez and Christobal de Ojeda. In that year Cortez, with about four hundred men, performed the incredible feat of conquering Mexico by defeating the great chieftain Moctezuma at the height of the Aztec culture. The

soldiers of Cortez gazed in awe and wonder at the remarkable temples, buildings, and the high degree of culture that prevailed.

An account by Bernal Diaz del Castillo, one of the followers of Cortez, reads as follows: "When we saw so many cities and villages built in the waters of the lake and other large towns on dry land, and that straight, level causeway leading into Mexico City, we were amazed and we said that it was like the enchanted things related in the book of Amadis because of the high towers, temples and buildings rising from the water, and all of masonry. And some of the soldiers even asked whether the things we saw were not a dream."

At the site of the first meeting between Cortez and Moctezuma a hospital stands. Cortez had this built in gratitude to God for his victory over Mexico. He began to build it in 1524, but patients were treated in it long before the completion date. This was the first hospital to be built on the American continent. (The first hospital to be built in the new world was in Santo Domingo in 1503). It is of interest to all medical men that this hospital is still in use after four hundred and thirty-five years. Its first director was Father Bartolome de Almedo.

In the year 1601, a wealthy woman donated a statue of Jesus to the chapel connected with the hospital and so its name was changed to its present name of "The Hospital of Jesus the Nazarene." When Hernando Cortez died in the year 1547, his remains were placed in the chapel of the hospital but were removed during the period of unrest, and where they now lie is unknown. In his will, Cortez provided for the completion of the hospital and for its administration.

In 1932, the Mexican Government placed the hospital under the supervision of private charities. Many additions have been made to the hospital, and when I was there in 1957, I saw not only a large modern hospital, but also the old hospital as a part of it with its lovely old Spanish style architecture and courtyard.

In the year 1527, an order was issued prohibiting the practice of medicine without a license and severe penalties were imposed for infractions of the order.

Nicolar Monardes (1508-1588), a physician of Seville, although he never went to the new world, wrote a book about medicinal plants, which was translated into English under the title of "Joyful Newes out a Newe Founde Worlde." London, 1577.

Francisco Hernandez, physician to Philip II, spent seven years in Mexico and described 3,000 medicinal plants and wrote accounts of two typhus fever epidemics and of autopsies on the victims.

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dictated by Bishop don Juan de Palafox y Mendoza, was that medical students were compelled to make human dissections or assist others to do so under penalty of forfeiture of their medical course. Since this came about in 1645, it is probably the first time in the world that this was one of the requirements of the medical curriculum.

The first medical degrees on the North American continent were issued in 1533, just two years after the establishment of the first university in America in Mexico City. However, once again the first university in the new world was established in Santa Domingo in 1538. The first chair in medicine in America was established in Mexico City in 1580. In 1585 the practice of medicine was supervised by the establishment of a board called the Tribunal del Protomedicato.

A former soldier of Cortez, a monk called Bernardino Alvarez, opened the first mental hospital in America, in Mexico in the year 1566.

Some of the men who came with Cortez left very good accounts of the local herbs used in various diseases. Pietre Martire d'Anghiera (1457-1526) mentions guaiac as a remedy for syphilis. Gonzalo Fernandez de Oviedo described guaiac, copaiba, cacao and tobacco. He also mentions yaws.

The first medical work to be published in the new world was the Opera Medicinalia of Francisco Bravo, printed in Mexico City in 1570.

Bernardino de Sahagun (1499-1590), a priest and missionary wrote a whole book on Mexican diseases and drugs, and described the Mexican techniques of treating wounds; also of massage and of the administering of enemata.

There are records of post-mortem caesarean sections in the years 1772 and 1779.

There were many journals of medicine in Mexico that were started, flourished for a time and then died. Among the earliest of these were the "Gaceta de Mexico" which appeared in January 1722 and the "Mercurio Volante" which appeared in 1773.

The first textbook of medicine in the western hemisphere was written in Spanish about the year 1774. It was written by Venegas and called "Compendio de la Medicina: O Medicina Practica." It was really written for the amateur physician. Very few of the old superstitions are referred to, such as amulets and others, and cow dung, human milk and human urine and scorpions are recommended for local applications, but not for internal use. Many excellent descriptions of diseases are listed, such as abscesses, arthritis, asthma, urinary calculi, diabetes, dysentery and cancer. About cancer, he states: "By means of amputation, cancer is rarely subject to a radical cure, but only if superficial, movable and circumscribed. If adherent, deep-seated or ulcerated, there is no cure except palliation."

The section on pneumonia is a clear and full account of the disease. The book is dedicated as follows: To the Great Model of Prelates and

Ecclesiastical Pastors, To the Doctor of Doctors, The patriarch Legislator of the same Patriarchs; To the Most Immovable Column of the Church, And Favored of the Holy Faith; To the Most Learned Physician, To the Great Man before God, And Well Merited among Men, San Agustin, Bishop of Hipona.

Trephining for skull fracture was done in 1793 and this was successful. It was the first operation of this kind in Mexico.

On orders from Charles IV, vaccinations were begun in Mexico in 1804. This was a result of an expedition from Spain.

Chloroform was first used in 1848 by Dr. Jose Pablo Martinez del Rio in Mexico City for a case of lithotomy with singular success.

Medical Practice Today

Medical practice in Mexico today is very complex and difficult to assess. Everyone in Mexico, including visitors, is entitled to so-called "free" medical care. The wealthy people have their own doctors and specialists, the middle class have what is known as Social Security, and the poor have the public health doctors.

Medical Care Under Social Security

Social Security is of fairly recent origin. Much of the plan was adapted from the British National Health Insurance plan. When transplanted to Mexico many problems had to be solved because the Mexican people are not homogeneous like the British, but are heterogeneous. Many live in isolated communities as they have done for centuries. Millions are illiterate, suspicious and resistant to change.

The concept of security in time of sickness and accident leading to a form of state medicine was first translated into law in Article 123 of the 1917 constitution. In this article it was considered to be in the public interest to make provision for illness, accidents, disabilities and death. However, the actual program was not in force until 1943.

Medical practice has changed a great deal from what it was before the introduction of socialized medicine through the administrative body known as the "Instituto Mexicano del Seguro Social" which undertakes to provide medical care from birth to death. The individual who has a social security card is entitled to the services of a government-paid doctor, hospitalization, ambulance, prescriptions and funeral.

The cost of operating the scheme is shared by the employer, employee and the government. Administration of this vast program is under the supervision of the Mexican Institute of Social Security. This agency collects contributions, makes benefit payments, acquires property to carry out the program and makes its own rules and regulations. A general assembly is the supreme authority of the Institute and is composed of 30 members. Ten are appointed by the president, ten by the

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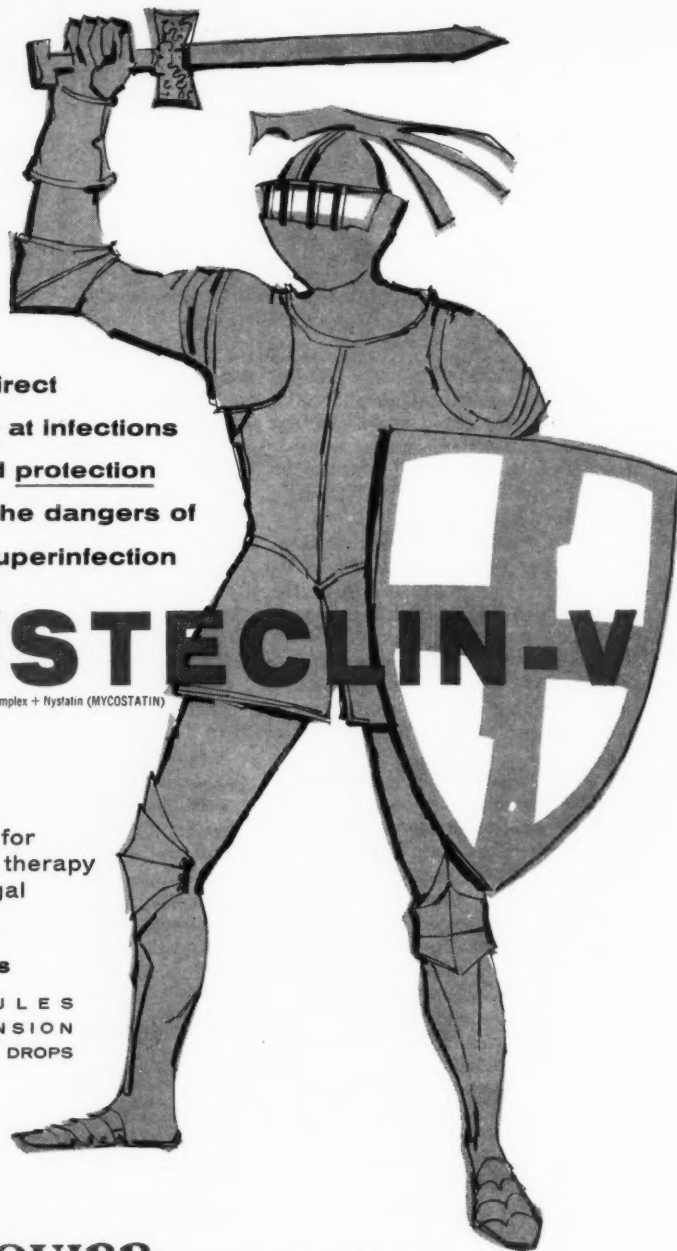
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employers' association and ten by the workers' associations. They hold office for six years and may be re-elected. The director general of the council is named by the president and is the head of a General Bureau. There are five main subdivisions of this bureau, of which one is medical. This bureau has several divisions dealing with laboratories, diagnostic services, health education and labor welfare.

The enrollments in the federal district started in 1943, and in that year the ministry of health and welfare was formed. The functions of this ministry are similar to the department of health and welfare in Canada. The ministry controls advertising regarding goods, beverages, medicines, and all types of health equipment.

One of the interesting and very practical rules of the Social Security is stated as follows: "The wife of the assured, or lacking this, the woman with whom he has lived for five years prior to the illness, and with whom he has children (provided both remain free of matrimony) will have certain rights. If the assured has various mistresses none of them will have the right to receive the benefits."

By 1953 about half a million people were insured under the scheme. Since the mortality in Mexico, both among adults and children, was one of the highest in the western hemisphere, far reaching health measures were undertaken. Routine inoculations and vaccinations were carried out. The death rate has been falling steadily, although deaths from enteritis, pneumonia and malaria are still high. There is, however, an improvement in life expectancy. In 1940 it was 39 years as compared to 63.8 years in the United States.

The hospital situation in Mexico is similar to that in other countries, in that there is a shortage of hospitals. This is being corrected with very limited budgets. In the early days the hospitals were intended for the dual purpose of serving as convents and hospitals. There is a trend in Mexico City now towards the establishment of research centres and specialized hospitals. One of the largest of these is the 600 bed children's hospital which is reported to be one of the best in the world. There is also an institute of health and tropical diseases, (1939) and an institute of nutrition.

In Mexico City, the National Institute of Cardiology, under the able direction of Ignacia Chavez, has become one of the most active centres for cardiological research on the American continent. It was built in 1944.

Doctors

There are over 13,000 doctors in Mexico, most of whom settle in the cities. The ratio of doctors to the general population is about 1 to 900. In the rural areas it is about 1 to 18,000. In order to try to correct this, the ministry of health and welfare and the National University's School of Medicine began a program in 1936 which required five months' rural service in a non-doctor area

before a degree was granted. The doctor earns about \$35.00 a month. This provides the community with a doctor and gives the medical student a valuable training. In taking over such a country practice the student is provided with office facilities and living quarters. He carries on health education, preventive medicine and curative medicine. The students are even encouraged to do scientific investigation insofar as they are able with the facilities at hand. It is estimated that about half of the doctors settle in the communities that they have served.

The scheme was first regional and this was later extended to industries. In effect, it is government medical care for the middle class.

Several thousand doctors are employed on a salary basis where they have to punch a clock like other employees, and there is a long list of young doctors waiting to get on the list. The young doctor has to apply for these salaried positions because the middle class, from whom he would normally draw his practice, is registered with social security; the rich go to established older men and specialists and the very poor, whom the scheme does not include, go to public health. This means that the very poor who need it most are not included, but the intention is to eventually include everybody.

One of the most disturbing features, second only to the loss of freedom of the doctor, is the standardization of medical care, where diseases are classified and only one form of treatment permitted as instructed in a large book called "Cuadro Basica de Medicamento."

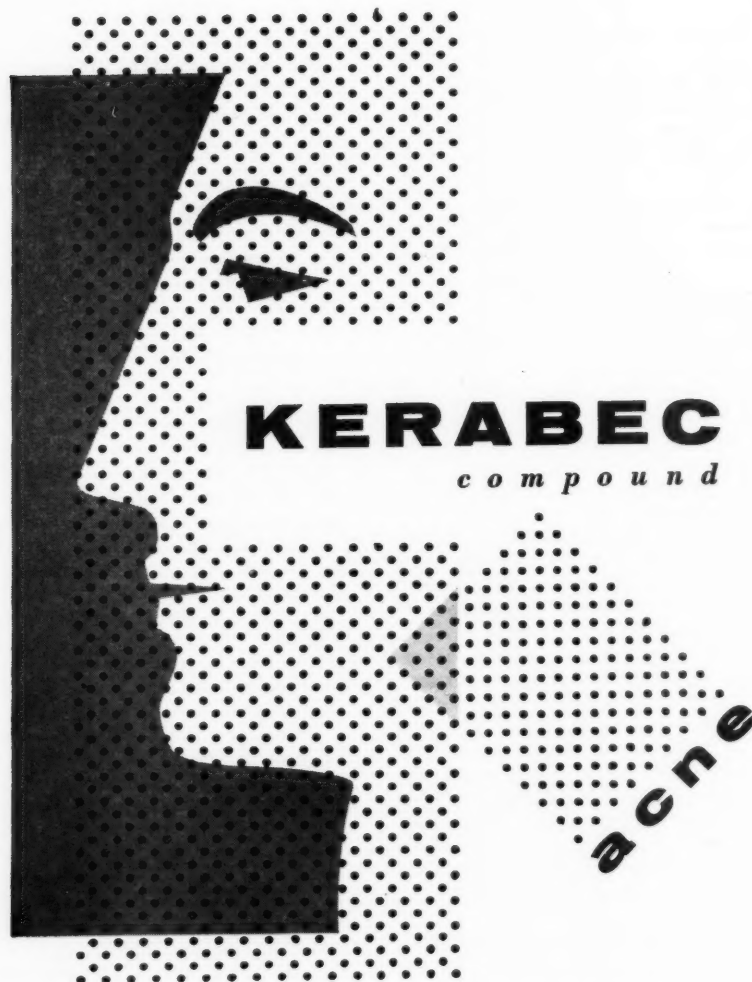
The doctors are graded into several categories. The directors of large clinics receive the most pay and are in Class A. All start in class F and work four hours daily for six days a week, but can do a week's work in one 24 hour shift.

Teams are sent out into remote areas in an attempt to stamp out contagious diseases and to instruct the people in sanitation and other health measures. The teams are composed of doctors, nurses, dentists, midwives, pharmacists and sanitary officers. This is directed by the Bureau of Co-operative Rural Medical Services.

There are four institutes that are very important to the welfare of the Mexicans. These are the institutes of Hygiene, the Institute of Nutrition, the Institute of Health and Tropical Diseases and the Institute of Cardiology.

In the year 1952 there were 12,980 physicians registered in the Bureau of Professions. This body has a registry of 98,620 professional persons.

In spite of all the progress that has been made in recent years, the magnitude of the task that lies ahead can best be illustrated by the fact that over half of the population in the towns of Mexico live in houses that are not close to drinking water. This means that the health authorities are dealing with large numbers of people living in widely scattered areas under very primitive conditions. The doctors,



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nurses and other health and welfare personnel are very devoted to their work, and their aim is to elevate the standard of medical care in Mexico so that it will compare favorably with that in other countries. Their industry and sincerity towards this end is beyond question. That much of this is being done without due regard to the wishes of the individual doctor and the medical association is unfortunate, just as it was in Britain ten years ago. It is to be hoped that this will be corrected soon, so that the Mexican doctors, who are in the best position to know, will be permitted to be active in formulating and executing plans designed for the public good. With the high mortality and morbidity rates prevailing in Mexico it was inevitable that

far-reaching medical reforms were long overdue. It is not too late to enlist the active and necessary co-operation of the medical profession in Mexico towards a state in which the profession can take pride in their work with the knowledge that they are active partners in this gigantic undertaking.

In preparing this paper for the historical section of your Society, I was dismayed to find that very little has been written in the English language on the subject and this prompts me to suggest that this would be a fruitful field for research.

Acknowledgments

I wish to thank the university professors, the public health officials of Mexico, and others who have helped me in the preparation of this paper.

Notices

Manitoba Chapter of the American College of Surgeons

The Annual Meeting of the Manitoba Chapter of the American College of Surgeons will be held in Winnipeg on November 19th, 1959. It will begin at 5:00 p.m., with a scientific session followed by a dinner and a paper to be given by the visiting speaker, Dr. George Crile of Cleveland. Further particulars could be obtained from either Dr. K. R. Trueman, President, or Dr. G. P. Fahrni, Secretary.

Advance Notice of the Visit

of
Professor J. H. Kellgren
Professor of Rheumatology
and

Director of Rheumatism Research Centre
Manchester, England

October 19th and 20th, 1959

During October of this year, Canada is being favored by a visit from one of the most renowned personages in the field of rheumatic diseases. Sponsored by the Canadian Arthritis and Rheumatism Society, Professor J. H. Kellgren of Manchester, England will tour the country, and make short stops at selected medical centers.

Dr. Kellgren is Professor of Rheumatology and Director of the Rheumatism Research Centre, Manchester University. He thus, notably, occupies one of the few such chairs in the world.

In Britain, Dr. Kellgren has the honor of being President of the Heberden Society (nodes, not angina). Abroad, he is recognized everywhere as a leading authority on connective tissue and its biology and disorders.

While in Winnipeg for only a little more than twenty-four hours, Dr. Kellgren has kindly consented to the following appearances:

Tuesday, October 20th, 1959, 9.00 a.m. — Lecture to medical students, Medical College Auditorium. Subject: The Diagnosis of Polyarthritides. Tuesday,

10.30 a.m. — Ward Rounds, Outpatient Department, Winnipeg General Hospital.

All practitioners and interested parties are invited to attend these functions.

Correction Notice

Radiotherapy Service

The following letter has been received from the Manitoba Cancer Treatment and Research Foundation:

"...

"I should like to inform you that, as from April 1, 1956, it was decided no charges for radiotherapeutic treatment should be made to residents of the province of Manitoba, cancelling the old arrangement whereby free treatments were given only to those residents outside the city of Winnipeg.

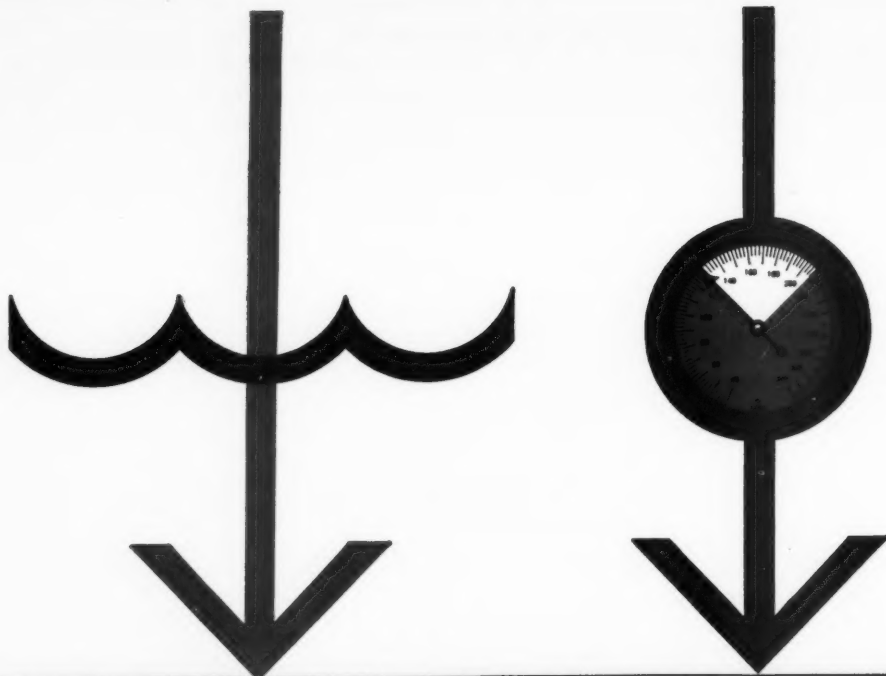
Note: The above appeared in the August-September issue under the heading, "Cost of Biopsies, Etc.", which was in error.

☆

Obituary

Dr. Arthur Murray Clare

Dr. Arthur Murray Clare, 65, died on September 8th. Born in Neepawa he was educated there and at St. Andrews College, Toronto. When the first world war broke out he was a student in Manitoba Medical College. He served in the Medical Corps, then returned in 1916 to complete his course. He became M.O. of 6th Durhams and was taken prisoner. After five years of pediatric training in New York, he began practice at Winnipeg where he was appointed Chief Pediatrician of St. Boniface Hospital and to the pediatric staff of the General, Children's and Grace Hospitals. He practised also at Langenberg, Saskatchewan and at Neepawa. He is survived by his wife, two sons and two grandchildren.



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Editorial

S. Vaisrub, M.D., M.R.C.P. (Lond.), F.R.C.P. (C.), F.A.C.P., Editor

Evolution Yesterday and Today

"The stone which the builders refused is become the head stone of the corner." Ps. CXVIII, 22.

The world commemorates this year the centenary of the theory of evolution, for it was one hundred years ago that the epoch making "Origin of Species by means of Natural Selection" first saw the light of print. Many would disagree with this date and declare 1858 as the true birthday, since it was on the first of July of that year that Darwin expounded his views in a joint paper with Alfred Russell Wallace before the Lineau Society.

Perhaps one could go even further back, in the interest of strict accuracy, and set the historic date a decade or so earlier to the time when Darwin communicated his ideas to his friends, Charles Lyell and Joseph Hooker in private letters and conversations. It is, indeed, remarkable that Darwin waited so long before considering his evidence sufficient to warrant publication. It is a feat of patience inconceivable today when theories invade print before the ink of the idea is dry in the mind of its proponent.

The birth of the Theory of Evolution was difficult and protracted, due, in large measure, to the strange, obsessive character of the brooding genius who fathered it. The Herculean labors, the epic adventures, the tormenting doubts, the intuitive flashes—all the ingredients of the great conception are now matters of faithfully recorded history. Nor was the subsequent growth of the theory peaceful and serene. The conflicts, the fanaticism, the violence, are also matters of historic record. The smooth sea of present day matter of fact acceptance, reveals no trace of the storm, that lashed and whipped it into fury for many a turbulent decade.

The magic wand of time has dispersed the clouds of discord. Not a trace of acrimony remains in any of the essays, critiques, reviews and editorials which commemorate today the centenary of the "Origin of Species," not a whit of the bitter conflict between religion and science. A reflective temper prevails, a mood of appreciation and deeper understanding. Interest has shifted from the controversial aspects of the theory of its ramifications and significant implications.

The ramifications of the theory of evolution are manifold. Originally confined to the field of biology, it has since overflowed its boundaries into many other fields. Historians, scientists, artists, sociologists in increasing numbers are interpreting advances in social organization, artistic creation, industrial development—in fact, the whole progress of civilization, in the light of the principles of

evolution. "Human history"—writes Julian Huxley ("New Wines in Old Bottles")—"may be looked upon as psychosocial evolution."

Of course, neither Huxley, nor Spencer, nor Toynbee, nor others who use the "evolutionary" approach to human progress claim that the Darwinian theory gave birth to the idea of progress, for, quite obviously, the latter, immanent in the vision of the Hebrew prophets, and basic to the credo of the Renaissance and Enlightenment, preceded the theory of evolution by centuries. What these thinkers maintain, however, is that human progress in all its aspects evolves from primitive to ever higher levels in a manner analogous to the evolution of higher species from lower forms of life. The processes of natural selection of the fittest for survival and of sudden mutations, operative in organic evolution, are also at work in human progress. Adaptability and fitness determine the survival of struggling social groups, nations and empires. Even abstract intellectual concepts, theories and ideologies evolve in a like manner from a multitude of ideas vying for acceptance. Human progress, according to this interpretation, is not a smooth continuous ascent to ever higher peaks, but a formidably wasteful and painful process of natural selection.

Needless to say, there still remain a few doubters who are reluctant to accept this view. They see little resemblance between the blind fumbling process of natural selection and, what they consider to be, purposeful advances of human society. Nor do they view the values and ideals that have inspired mankind and guided to destiny, in the light of their worth for survival. They cannot quite fit the Fifth Symphony into the "struggle for existence," nor can they tie in the Mona Lisa with "adaptation to environment."

The ramifications of the idea of evolution, important as they may be, are not the sole, nor the main preoccupation of those, whose thoughts and reflections make up the bulk of current commemorative comments. The present day pundits are more concerned with the implications of the subtle interrelationships between biological evolution and human progress. They are particularly apprehensive about the adverse effects of scientific progress upon the two main factors of biological evolution—natural selection and mutation of the germ cell. They perceive a major menace to natural selection in the rapid increases of population with perpetuation of misfits protected by hygiene, law and charity. They fear undesirable mutations from radiation. They see a threat to global homeostasis and possible peril to all organic life in the extincive potentialities of nuclear fission. They look on

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*Bickerman, H. A.: *In Drugs of
Choice* 1956-1959, ed. by W. Modell,
Mosby, St. Louis, 1958, p. 562.

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helplessly, while forces unleashed by the mind of man bite deep into the flesh of organic matter.

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This recognition by scientists of the utter dependence of organic life on spiritual values is a recent development. No self-respecting, tough-minded, scientific contemporary of Darwin would have entertained such thoughts. Even a scientist of but one generation ago would have found the whole subject intensely embarrassing. Spiritual values were the province of the poet, the preacher, the artist and the philosopher. Their relevance to biology was not apparent, their importance to survival—for from obvious. Their current elevation to front page status is but another manifestation of the irony of fate on a grand scale.

"The stone which the builders refused" . . . Ed.



Annual Meeting 1959

The Review extends a hearty welcome to the guests of the 51st Annual Meeting of the Manitoba Medical Association. In the embarrassing eventuality of this issue appearing after the Convention (such are the unpredictables of the publishing-trade!) the Review has in reserve an equally cordial "au revoir."

To the cynically minded who claim that all conventions are alike and "once you've seen one, you've seen them all" may be retold the oft heard story about the cynical physician who countered his patient's anguished complaint: "Doctor, I lost my appetite and have not taken any food for a week" with a shrug and a facetious reply: "You have not missed a thing, the food tastes just the same."

Whether it tastes the same or not, food is essential and so, of course, are conventions. As a matter of fact, the "sameness" is more apparent than real. The similarity is that of form rather than content. Some of the speakers may be the same, as are many of the topics, but against the ever changing panorama of Medicine each Annual Meeting appears to be not so much a repetition as a reorientation.

Disoriented in time, uncertain of the date of its publication, this editorial speaks in terms both of anticipation and retrospection in asserting its full confidence in the success of The Convention.

Welcome and au revoir.

Ed.

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Letters to The Editor

Dear Editor:

A letter from an insurance company to doctors in Manitoba with patients employed by an industrial plant was recently brought to the attention of the Executive of the Manitoba Medical Association. The letter was referred to the Committee on Economics of the Division for examination. The committee agreed that several points involved should be drawn to the notice of the profession.

(1) The insurance company advised the doctors in its letter to them that the company guarantees the doctors' fee on the basis of the fee schedule of the Manitoba Medical Association. In Manitoba a schedule of fees is provided for the use of doctors by the Association as a guide for assessing charges for medical services. The schedule does not represent fixed charges, but is, it should be emphasized, a guide. The fee may be assessed above or below the amount suggested, variation depending upon ease or difficulty in treating the patient, his economic status and other factors common in medical practice.

The inference of the insurance company can only suggest, and it has been encountered in communications from other commercial carriers, that the fee schedule of this Division is to be regarded as a fixed basis for payment of doctors treating patients who are employees covered by a contract negotiated between their company and a commercial carrier. This is a presumption which cannot be accepted and doctors are advised that they should continue to make their usual charge, irrespective of the contract terms found in the policies of certain insurance companies. The coverage generally provided is indemnity or partial coverage for medical services. There are well known exceptions to this arrangement. Thus it should be reaffirmed to the profession that complete or comprehensive coverage of services for fixed amounts, found in their respective fee schedules, affects the doctors in their relations with the following only, viz., D.V.A., Workmen's Compensation Board and Manitoba Health Service. Their fee schedules have been accepted as full coverage as the result of formal agreement between these bodies and the Manitoba Medical Association.

(2) A second matter involves billing the patient. The recent communication from the insurance company advised the doctors to fill out a report form and attach a bill for his services. The report with the bill was to be sent directly to the insurance company when payment was to be made directly to the doctor by the company. This method is a proper one when dealing with organizations specified above but not acceptable otherwise in private practice. It is well established that the

patient is to be charged directly and he pays according to whatever ability he possesses. When insured he makes use of the benefits of his coverage to complete his payment.

This principle cannot be over-emphasized as its neglect removes from the doctor and patient an intimate part of their traditional relationship which is so highly regarded in private practice. That this is a true principle and one accepted in the policy of the newly formed Canada Life Insurance Medical Officers Association, the following is reproduced from the report of its standing committee of May 7th, 1959, and directed to Dr. Macfarland, Executive Director of this Division:

"Direct billing of patients before completion of insurance claim forms, while this may not be possible in all cases, we would request that you ask your members to bill the patients directly for services or before completing the insurance claim forms."

It is agreed in the policy of the Canadian Medical Association that the principle of pre-payment for medical services is the most satisfactory for most people. This policy does not differentiate between carriers of such insurance, whether they be commercial enterprises or doctor sponsored. There can be, however, among the former group a tendency to obtain as much coverage as possible for their policy holders while limiting their payment and fee schedules. However, some fee schedules are the equal of those established by the profession itself. It is to the disadvantage of the profession if it accepts indemnity or partial coverage schedules as full value for medical services. It is apparent that such acceptance could eventually place the decision of fee making in the hands of third parties. Fee schedules, regarded by the profession as fair, would tend to be meaningless. Since some companies indicate to their policy holders that the doctors will accept as full payment their schedule, extra billing would be increasingly difficult (On the other hand the practice of raising a fee outrageously to a patient in moderate circumstances and protected by a carrier with a proper fee schedule should be condemned by the profession). In this respect billing the company directly compounds our problem as the patient is by-passed and is not aware perhaps of his full obligation. The doctor, in his own and, equally important, his colleague's interest, should bill the patient always, for it is with him that any contact originated as in any form of two party undertaking. This is the old and accepted custom. No doubt the doctor may occasionally lose out since the patient may fail, as he has sometimes in the past, to honour his obligation. The doctor must accept the decision whether this principle is to be maintained or whether he

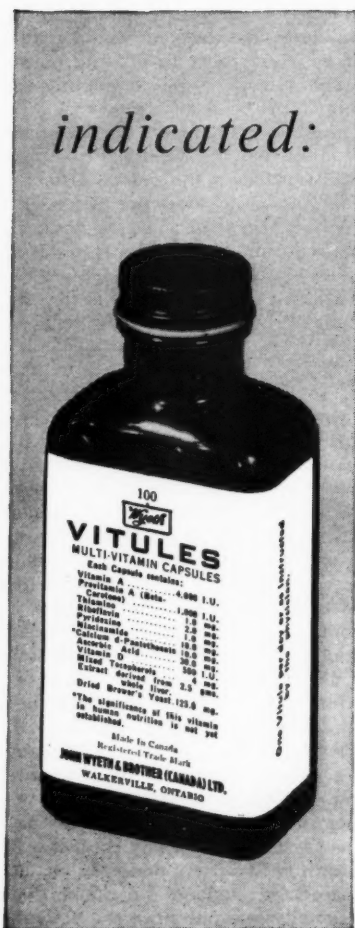
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Pyridoxine	1 mg.
Ascorbic Acid (as Sodium Salt)	30 mg.
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wishes to be eventually in the position of accepting payment from and determined by a third party.

In conclusion, Sir, it should be stated that all differences involved in the foregoing between the insurance company and the profession have been resolved and new instructions to the profession will be forthcoming.

Yours sincerely,

K. R. Trueman, Chairman,
Committee on Economics,
Manitoba Division,
Canadian Medical Association.

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Dear Editor:

At practically every staff meeting at the various hospitals in Winnipeg, the problem of the shortage of hospital beds is discussed. Obviously there is no easy solution to this problem, but it occurred to me that anything which might even in a small way help relieve the situation would be worth considering. With this in mind I suggest that some thought

might be given to certain diagnostic operative procedures which, under certain circumstances, might be substituted for the current routine practice thus reducing or eliminating hospital stay.

In cases of masses found in the female breast, in a certain percentage of cases it might be good medical procedure to do an office or O.P.D. aspiration biopsy. If fluid is encountered and the mass disappears, admission for operative biopsy excision might not be necessary.

An increasing number of our staff are using the Novak curette in their offices to attempt to establish a diagnosis, before admitting patients for a diagnostic D. & C. It is realized that only positive diagnoses are significant and, if a diagnosis cannot be positively established by the Novak curette, then additional investigation would obviously be proceeded with.

The above two procedures and others might be considered in the overall problem of relieving the hospital load.

Yours very truly,

D. W. Penner, M.D.

Book Review

Biochemistry in Relation to Medicine. C. W. Carter, D. S. Coxon, R. H. S. Thompson. 3rd Edition, 1959, pp. 628.

This book, designed primarily for students, encompasses the Medical Biochemical field between its covers in condensed, basic and well established form.

The opening part of the book, which covers physical principles and methods, is especially useful as it refreshes the student on such subjects as pH, buffers, spectrophotometry, which he may have largely forgotten.

The next section of the text deals with the fundamental biochemistry of carbohydrate, fat, protein, enzymes, biological oxidations and similar basic chemistry. The authors then go on to consider the metabolism of these and other substances and to relate this biochemistry to changes in organ function.

Primarily, this is a standard introductory textbook. It does not deal with the most recent findings, such as the varieties of hemoglobins, more recent clotting factors, or new concepts of bilirubin metabolism. However, it is too much to expect of any textbook of biochemistry to be up to date and not lag a few years behind the rapid progress being made in this field. This textbook gives the student a good jumping-off point to the more current biochemical literature.

P. T. G.

Abstracts from the Literature

Determinations of Serum Enzymes in Surgical Patients: Value in Diagnosis of Complicating Myocardial Infarction: Weisberg, R. L., and Sampson, J. J., *American Heart Journal*, Vol. 57: 240-246, Feb. 1959.

Time curves of serum enzyme activities of serum glutamic oxalacetic transaminase (SGOT), and serum lactic dehydrogenase (SLDH) have proven valuable aids in the diagnosis of doubtful myocardial infarctions. Diagnosis may be difficult in cases where the patient is unaware of pain or incapable of expressing discomfort owing to drug analgesia or anaesthesia. This may occur during surgical procedures or in the immediate post-operative period. Myocardial infarction should be suspected in elderly patients having unexplained post-operative hypotension or circulatory failure. The electrocardiogram may be of help, but fever, leukocytosis or rapid sedimentation rate may be unrelated to the myocardial damage. Some observers have attributed post-operative increase in SGOT and SLDH to liver damage or trauma. This paper presents a series of miscellaneous surgical cases in which no significant elevations with time curves were obtained, unless myocardial infarction was a complication.

Seventeen of 21 cases underwent laparotomy or other major surgery, and four had minor procedures. Moderate trauma and necrosis of muscle did not cause significant enzyme activity, nor did the various anesthetic agents appear to influence

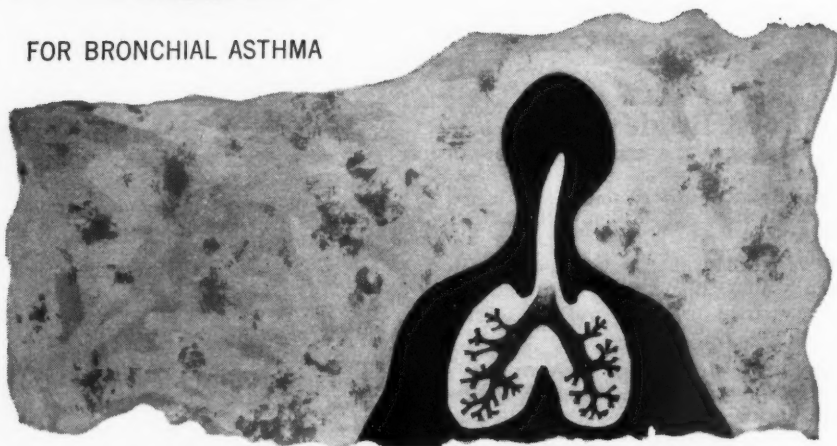
FOR RHEUMATOID ARTHRITIS



FOR DERMATOSES AND ALLERGIC DISORDERS



FOR BRONCHIAL ASTHMA



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the levels. One case of pneumonectomy exhibited a more persistent rise of SGOT which was not typical of the rapid rise and fall after an infarction. One case showed a typical variation and was indeed complicated by myocardial infarction. One patient having chronic liver disease exhibited high SGOT and SGPT levels.

It is concluded that surgical procedures may cause certain fluctuations within the presently accepted range of normal or minimally abnormal, but will not produce an elevation of enzyme activity sufficient to mask the characteristic curve of a major myocardial infarction.

V. M. Storrie, M.D.

★

Rehabilitation of Farmers with Heart Disease:

January, L. E., Stockovic, J. P., Robb, T. A., Van Eschen, W. L. J.A.M.A. Vol. 169: 427-430, Jan. 31, 1959.

While increasing efforts have been made to evaluate rehabilitation needs of cardiac patients in industry, there has not been a similar analysis made of such persons in agricultural work. This is the report of a two year study, applying principles used in industrial work evaluation to a rural setting.

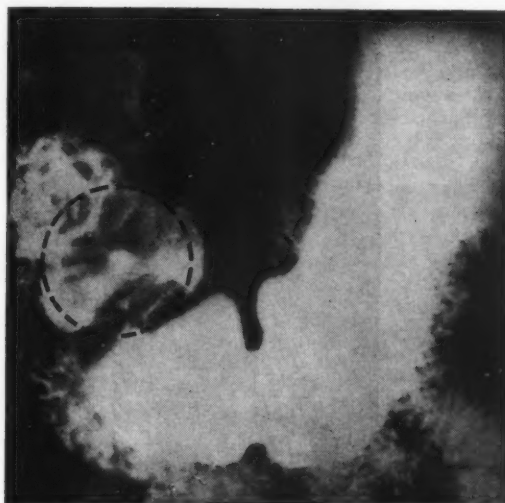
Patients were selected in an Iowa county, population 19,550, with 8,000 people on farms. Medical evaluation was done at State University of Iowa Medical Center. The most frequent diagnosis was arteriosclerotic cardiovascular disease. A team composed of county extension job analyst, and a vocational counselor visited farms to assess buildings, equipment, crop and livestock practices, work habits and financial status, managerial ability and past performance.

It was estimated that 50% of general farm jobs are still done by hand labor, and that energy costs exceed those of the majority of industrial jobs. Factors of weather and peak work load were also considered, in an endeavor to make recommendations to patients and their families to assist them to remain in agricultural work.

Forty-six patients, three of them women, were studied, and their heart disease classified according to the classification of the American Heart Association. The recommendations made to patients varied from no specific changes to major alterations or substitutions in farm operation. Some individuals were advised to adopt partial or partnership farming; some were encouraged to retire or change to sedentary work. There was excellent co-operation, and the information obtained by the field workers enabled the physician to base his advice on all the variables affecting the patient as well as the functional cardiac classification. Follow-up studies of 32 of the 46 patients 2-3 years after joining the group, showed that two had died from myocardial infarctions in second attacks unrelated to their work. There was no aggravation of cardiac disease in the other 30.

V. M. Storrie.

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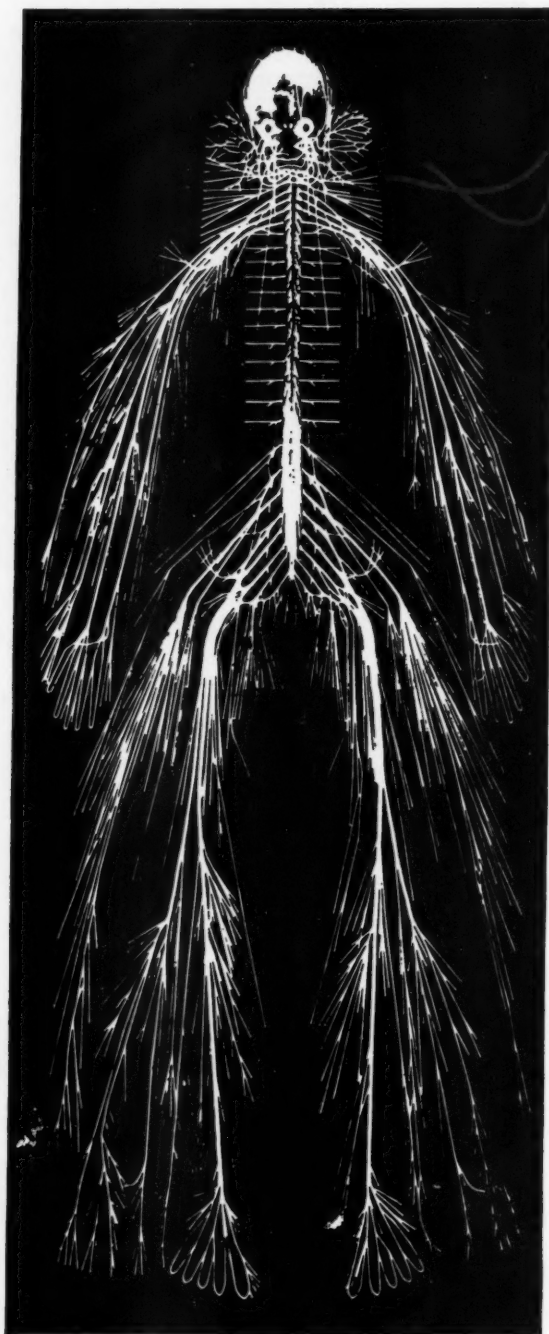
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two hours after meals or whenever symptoms occur.*

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WALKERVILLE, ONTARIO

←Dissection of nervous system
by R. B. Weaver, A.M., M.D.,
Sc.D., late Professor of Anatomy,
Hahnemann Medical College and
Hospital. Courtesy of Hahnemann
Medical College Museum.

Association Page

Reported by M. T. Macfarland, M.D.

Aye! We Will Come Back Again

*"By crag and lonely moor she stands,
This Mother of half a world's great men
And out of the heart of her haunted land
She calls her children home again."*

Edinburgh was like a dear old mother as she welcomed her children and her children's children. Her great heart throbbed in anticipation of their arrival. Her pipers, her soldiers and her highland dancers were all arrayed in their finest kilts. Everyone from the Lord Provost attired in robes of civic office, to the humblest citizen, extended a warm welcome. Canadians were honored in having the Castle floodlit every night for added enjoyment. It stood above the darkened gardens like a white fairy castle suspended in mid-air.

Such was the environment which greeted the Canadian doctors and their wives while they were guests of the British Medical Association. The only honor denied them was that of having their name on the floral clock in Princes Street gardens. It seemed most fitting that "Her loved ploughman, he of Ayr" should have this honor and his name bloomed in fragrant memory of his bicentenary. However, a special emblem was planted at the top of the mound, a shield in rich red color, with large golden maple leaf and B.M.A. letters. It was symbolic of the warm relationship which prevailed at the joint meeting of the two medical associations.

This tribute, I am sure, is an expression of what is in the heart and mind of every Canadian wife or daughter who was a guest at that historic meeting in Edinburgh. The gracious, warm hospitality of our hostesses will long be remembered and is deeply appreciated. Our most sincere thanks seem quite inadequate in return, but we came home feeling that we had been greatly honored by their kindness in planning so many delightful events for our entertainment.

A program of variety and interest made selection difficult and all to be crowded into one short week. The major social gatherings, of course were for husbands and wives; such as dinners, the Symphony concert, the garden party at Holyrood and the military display on the esplanade of the Castle. But while our husbands were absorbed in scientific meetings we were certainly not left at loose ends.

There were tours arranged to Scottish Castles in the highlands, visits to historic houses, a fashion show, coffee parties and golf. For those with a creative urge, factories of unique interest were open to visitors. These are only a few of the items on the ladies' program which will be mentioned in greater detail.

The Assembly Hall was the central meeting place for registration, social gatherings, luncheons and teas. Here, the women's committee functioned at

top speed; not a question was left unanswered, nor a wish that was not fulfilled. As the Canadian women registered, each was given a sterling silver pin set with that native Scottish stone "The Cairngorm." This efficiency and friendly environment were enhanced by the beauty which abounded everywhere. At the entrance and in each room lovely floral arrangements gladdened the eye. This was no garish display. One immediately felt that an artist had been at work and it was revealed that the convener of the floral committee was truly a genius with flowers. She was a spritely little lady, a doctor's wife, who had just returned from Paris where she had won several awards for her arrangements at the annual flower show. But she is a gardener as well and had been planning for this convention months ahead. Regal lilies had been planted to bloom for this special occasion. Each morning, her face beaming, she came in with baskets full of fresh flowers to replenish the many bouquets; hence they retained their beauty throughout the week. This contribution was one of the delights we will remember and we gratefully thank those who contributed and arranged these bounties of nature.

On a beautiful Sunday afternoon, St. Giles Cathedral, that historic place of worship, opened its portals for the Thanksgiving service. What reverent dignity prevailed as the colorful procession entered the west door, solemnly bearing the banner of the British Medical Association to the sanctuary where it was laid on the Holy table. A Scottish voice beseeched a blessing for those assembled and on the work of ministering to the sick. Voices rose in splendour through the hallowed walls singing that beautiful psalm, "All people that on earth do dwell, sing to the Lord with cheerful voice." Dr. Whitely, minister of St. Giles, delivered a message which was deeply moving. He paid great tribute to the pioneers in the medical profession and delivered an inspiring challenge to those who are following them in ever widening fields of service.

Sunday evening we experienced Scottish hospitality at its best when we were guests in the homes of Edinburgh doctors and their wives. Here we met old friends and new. After these pleasant supper parties most guests were entertained at the special concert provided by the B.B.C. Scottish orchestra which was conducted by Dr. Ian White. On this occasion the violin soloist was Miss Jean Harvey (a pupil of Winnipeg-born Frederick Grinke). This was a fine introduction to the week's entertainment.

The charming scenery of rural Scotland has always been attractive to visitors, so the well chosen tours were extremely popular, especially

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*Patented, 1951.

DOSAGE: One tablet before each meal and one or two tablets at bedtime.

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MONTREAL CANADA

when to such historic places as Melrose and Dryburgh Abbeys, Loch Lomond, Stirling, Ayr and many others, including Abbotsford. The visits to these places mentioned were well rewarding as they are all steeped in Scottish history; for example, the home of Sir Walter Scott, where he spent his literary life and to his resting place at Dryburgh Abbey. This was a memorable afternoon and calls to mind the lines of Wilfred Campbell:

*"Out where the miles of heather sweep
Her dust of legend in his breast
'Neath aged Dryburgh aisle and keep
Her wizard Walter takes his rest."*

The creation of beautiful things makes a strong appeal to most of us and the visit to the Edinburgh Crystal Glass factory was one interesting place we shall remember. Here we watched with fascination the skilled hands, with the simplest tools, turning out engraved and cut glass of exquisite beauty, much of which is imported to Canada.

Another factory which was open to us was Ballantynes at Peebles. To add to the delight of this afternoon, we drove over moors where there was no habitation for many miles, but picturesque scenes of shepherds with their dogs leisurely guarding the sheep, surely a suitable introduction to a woolen factory. Here we saw the making of those beautiful Cashmere sweaters which are treasured in every Canadian girl's wardrobe. The new designs which are not on the market as yet, will make them even more popular.

The young folk were not forgotten in the social program. An all-day sail on the Firth of Clyde on a beautiful day was a perfect outing for lads and lassies with hearts young and gay. It would not be surprising if "Cupid" himself had a booking on this excursion.

A fashion show erased any doubts we may have had about the styling of Scottish tweeds. The models were most attractive lassies, Sheena, Morag, Sheila and Kirsty, whose rosy cheeks enhanced the lovely heather colors in the garments they displayed. The reaction of the audience must have been most gratifying, but with a sponsor by the name of Roderick Tweedie, could it be other than a success.

The Palace of Holyrood House, official residence of the Queen was graciously opened, with her permission, for a garden party. This seemed particularly suitable as His Royal Highness, Prince Philip is President of the Canadian Medical Association this year. Although it was impossible for either of them to be present at the convention, their warm messages sent from Canada assured us that they sincerely welcomed us as their guests. Her Majesty's greeting was conveyed by the Hereditary Keeper of the Palace, The Duke of Hamilton. It was still another perfect day. The landscape, surrounding scenery and Arthur's Seat lent enchantment to the afternoon. The huge Scotch Thistles flanking the Palace walls bespoke their emblematic message. It was leisurely, relaxed and a thoroughly

enjoyable party, friends mingled and the program of band music during tea was delightful. Guests were given an opportunity to go through the Palace. Here shades of history came to mind but it was too nice a day for ghosts to appear.

The greatest achievement of the social committee was the dinner for two thousand guests. Never before had Edinburgh catered for so many at a banquet and the only place suitable was Waverley Market. The British Medical Association was host to their Canadian visitors, a gracious gesture indeed. Nothing had been spared in making this an outstanding formal event. The market was transformed from one of utilitarian use to a festive hall. The entire floor was covered with green canvas, the ceiling draped with bunting in B.M.A. colors and the floral arrangements wrought miracles. The reception, the seating and serving of guests was a masterpiece of organization. The best of Scottish fare, both food and wine was served by an army of waiters. The guests at the head table numbered one hundred and forty, an impressive and distinguished company. With the aid of amplifiers the well chosen greetings and toasts reached every corner of the great hall. On behalf of the Canadian guests a sincere vote of thanks was moved by Dr. E. Kirk Lyon.

The week was drawing to a close, but was climaxed by a farewell party for the overseas guests. The assembly hall, still resplendent with flowers, was the setting for a delightful program. The champion highland dancers of Scotland entertained us with Strathspeys, Reels and Sword dances, all to the tune of the pipes. As we listened to the folk songs and Border ballads we felt we were truly a part of a Scottish family instead of guests for one short week.

Where else but in Edinburgh would a great throng of every color and race join hands and sing "Auld Lang Syne," and where but in Scotland would eyes be dimmed as we listened to the haunting lament of that old Scottish farewell, "Will ye no come back again."

Mary E. Tisdale.



Report of Nominating Committee Manitoba Medical Association

The following is added to the report of the Nominating Committee which appeared on page 525 of the August-September issue:

Winnipeg Member-at-Large:

Dr. A. R. Birt, Winnipeg

Dr. S. A. Boyd, Winnipeg

Board of Trustees, Manitoba Health Service:
(seven to be selected)

Dr. F. G. Allison

Dr. W. D. Bowman

Dr. J. L. Downey

Dr. A. M. Goodwin

Dr. W. C. Guest

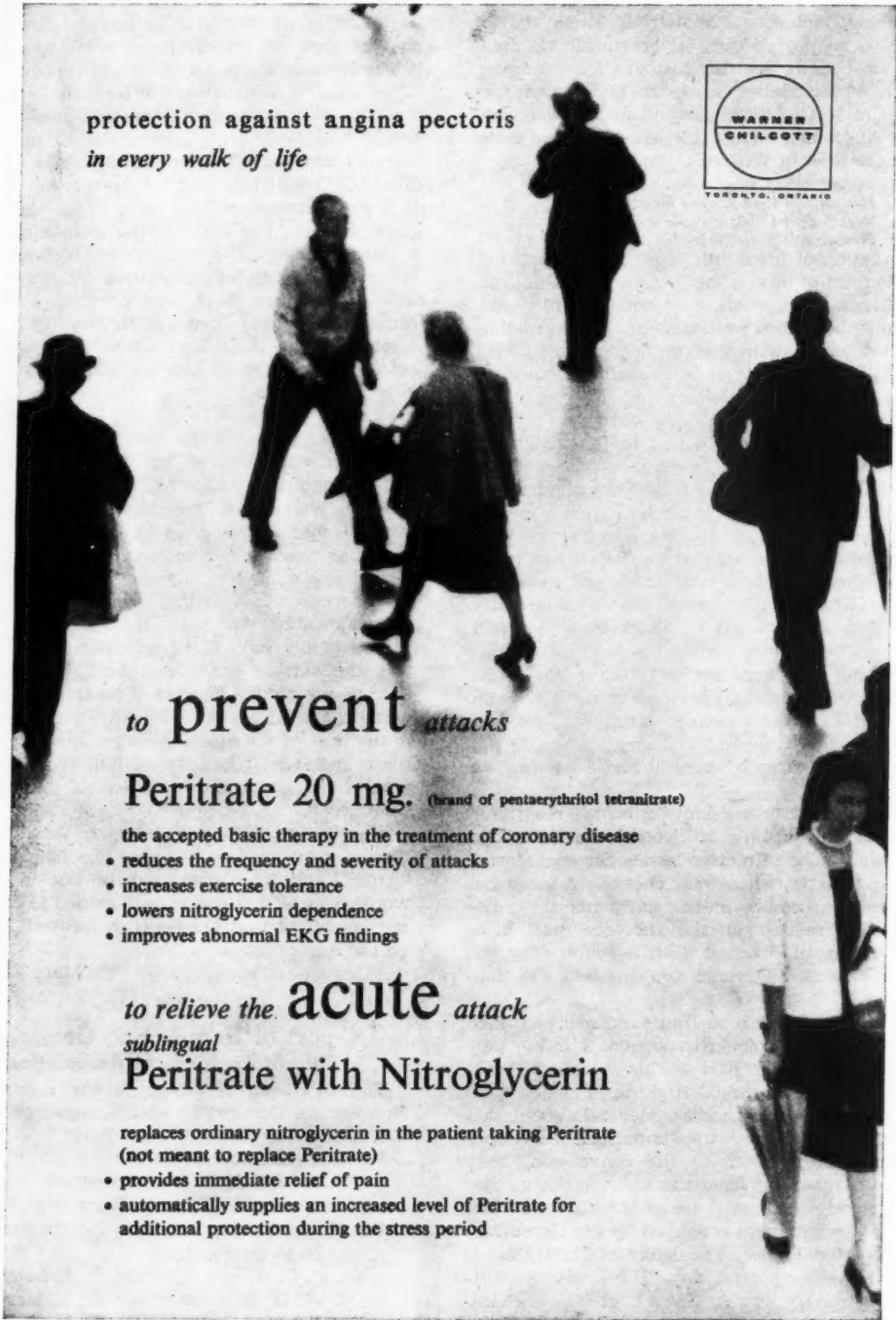
Dr. B. E. Loadman

Dr. M. R. MacCharles

Dr. D. N. C. McIntyre

Dr. L. R. Rabson

Dr. M. J. Ranosky



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- improves abnormal EKG findings

to relieve the **acute** attack
sublingual

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replaces ordinary nitroglycerin in the patient taking Peritrate
(not meant to replace Peritrate)

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Social News

Reported by K. Borthwick-Leslie, M.D.

At this moment it's a moot question whether the month's holiday was worth it. Now have two months to condense and probably miss important news. Also skipping the Convention to do so—but listening to L.A. vs. White Sox in the big game. Compensations!!!

☆
Space does not allow for full reports on the farewells for Dr. T. A. Pincock retiring as Provincial Psychiatrist, but remaining as leader of the A.A.A. and assuming post of alcohol research director at the U. of M.—Dr. and Mrs. Pincock are at present touring the continent. Just as imposing naturally, are the receptions for Dr. Pincock's successor, our well known President of M.M.A., Dr. Edward Johnson, for years Superintendent of Selkirk Mental Hospital, interested in Psychiatry since his graduation from Manitoba Medical College in 1928.

Farewell and welcome in sequence and best wishes for both.

☆
The wedding took place September 19, 1959 at St. Ignatius Church, of Margaret Mary Clare McMaster, daughter of Dr. and Mrs. J. C. McMaster to Dr. Robert James Hoeschen, son of Mr. and Mrs. J. C. Hoeschen.

☆
Mighty interesting press interview with Dr. Margaret E. McGuire—Chief Librarian, Winnipeg General Hospital. One doesn't realize how much study and involved work goes into the keeping of those all-important records—Congratulations to Dr. McGuire on both her professional and personal achievements.

☆
The Manitoba Clinic announces that Leon Michaels, M.D., Ph.D. (Lond.), M.R.C.P. (Lond.) recently of Guy's Hospital Cardiac Department and The Cardiac Catheterization Laboratory of Mayo Clinic has joined their Department of Medicine and Cardiology—also—James H. Brown, M.D., Ch.B. (Edin.), D.P.M. (London) M.R.C.P. (Edin.) recently of Dundee Royal Mental Hospital, Scotland, is now practising in the Department of Psychological Medicine.

☆
The heartiest of congratulation to our beloved Dr. and Mrs. Ross Mitchell on the celebration of their 50th wedding anniversary. Dr. and Mrs. James Mitchell, Jean and Mrs. George T. McIntosh entertained in their honor, September 29th at the home of Mr. and Mrs. McIntosh, Oxford St. Receiving, with the guests of honor were Mrs. J. R. Davidson and Mrs. Digby Wheeler.

☆
Dr. Harry Medovy, Professor of Pediatrics and Pediatrician-in-chief, Children's Hospital, will lead the discussion at a round table conference in Chicago, October 5th and 6th, at the 28th annual meeting of the American Academy of Pediatrics. Some 6,000 specialists in child health from Canada, U.S.A., Central and South America and West Indies are expected to attend.

☆
Dr. Dorothy Hill, Whitney, England, who has been doing post graduate work at Misericordia Hospital has been named medical director of the Portage la Prairie health unit. Appointment by the Provincial Department of Health and Public Welfare.

Dr. and Mrs. Edward B. Abbott and daughter, of Edmonton, Alta., are visiting Dr. Abbott's parents, Dr. and Mrs. A. C. Abbott. They will be attending the wedding of Dr. and Mrs. A. C. Abbott's daughter, Frances Eileen, October 6, 1959, to Mr. John Walferston Gunn, son of Dr. and Mrs. John A. Gunn. In January Dr. Edward Abbott will move to Cleveland, Ohio, where he plans on doing post graduate work.

☆
Dr. and Mrs. Lorne W. Reznowski announce the engagement of their only daughter, Celeste Anne to Ernest Theodore Farion, Kamsack, Sask. The wedding to be October 17, 1959, in the Holy Ghost Catholic Church.

☆
Stork News—and has he been busy!
Dr. and Mrs. Robert LeRoi—a son Mark, August 7, 1959, St. Tropez, France.

Dr. and Mrs. Oscar Domke—a daughter, Heather Lois, July 5, 1959.

Dr. and Mrs. Lorne L. Campbell—a daughter, Barbara Elsie, in Windsor, Ont., August 19, 1959, sister for Ian and Barry.

Dr. and Mrs. F. W. Duval—a son, Wm. Wardell, August 29, 1959.

Dr. and Mrs. R. K. Maccoomb (nee Carol Smith) a daughter, Catherine Anne, August 29, 1959.

Dr. and Mrs. David Grewar—a son, August 31, 1959.

Dr. and Mrs. Pitamber Geer—a son, Roderick Kenneth, September 5, 1959.

Dr. and Mrs. P. M. F. McGarry—a daughter, Dierdre Mary, September 3, 1959.

Dr. and Mrs. Keith Stinson—Sheila Gail, baby sister for David, September 3, 1959.

Dr. and Mrs. Manly B. Levin—Brenda Lee, baby sister for Heather, Sheldon and Sydney, September 13, 1959.

Dr. and Mrs. T. A. Lebbetter, Jr.—a daughter, Catherine May, September 9, 1959, in Montreal, Que.

Dr. and Mrs. Max Cham—a son, David Earl, September 17, 1959.

Dr. and Mrs. Joan Mowczan, of Arborg, Man.—a daughter, Tania Bonita, August 31, 1959.

Mr. and Mrs. G. Cerewan (nee Dr. E. Kolesnichenko)—Elizabeth Alexandra, baby sister for George, September 20, 1959.

Dr. and Mrs. Mark Wall—a son, Murray Eli, September 8, 1959.

Dr. and Mrs. Alvin E. Cera—Daniel Michael, baby brother for Orme and Kelli, October 1, 1959.

Dr. and Mrs. H. N. Lange, Russell, Man—a daughter, Shannon Gay, September 28, 1959.

Dr. and Mrs. James Morison—a son, David Glen, October 4, 1959.

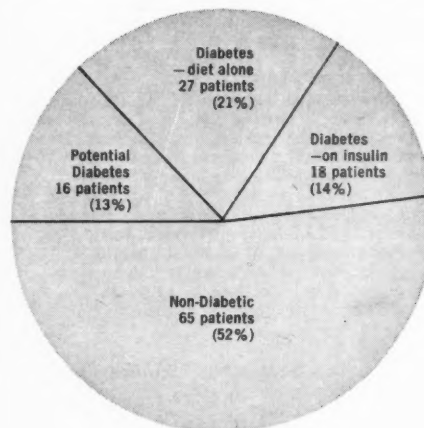
Dr. and Mrs. G. W. Ritchie—a son, Andrew Walter, on September 29, 1959.

Welcome to all Juniors and congratulations to all parents.

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*Murphy, R.: Connecticut M. J. 21:306, 1957.

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So pure and fresh in sparkling glass, Swift's new Meat Dinners for Babies are a carefully balanced combination of Swift's lean, 100% meat, vegetables and a little cereal. Like Swift's well-known 100% Meats for Babies, they're prepared from only the very finest ingredients. The leanest, freshest meats . . . the youngest, freshest vegetables—all trimmed, cooked, and pureed with

the greatest care—make Swift's Meat Dinners nutritious, easy to digest.

Swift's new Meat Dinners provide another fine way to include the important values of meat in the infant diet. You can recommend Swift's Meat Dinners for Babies with confidence. 5 varieties: Beef, Chicken, Ham, Veal and Lamb. (Most are also available in chopped form for Juniors.)

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	Adult	Pediatric	Adult	Pediatric
Sodium Pentobarbital	16 mg.	4 mg.	20 mg.	5 mg.
Ephedrine Sulphate	24 mg.	8 mg.	30 mg.	10 mg.
Theophylline Ethylenediamine	100 mg.	24 mg.	120 mg.	30 mg.
Levo-hyoscyamine	0.25 mg.	0.06 mg.	0.33 mg.	0.08 mg.
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Indications: Chronic bronchial asthma (in adults) and bronchial asthma and croup (in children).

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**ITS MAIN FEATURE IS LITTLE OR NO RESPIRATORY DEPRESSION
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Carnation Evaporated Milk provides:

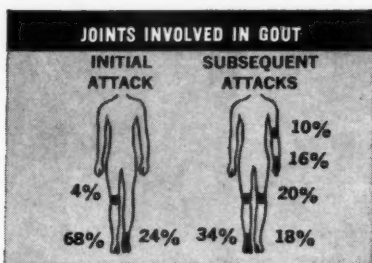
- All the food values of pasteurized whole milk, in a more digestible form.
- All the butterfat of whole milk, so important for normal energy.
- Increased Vitamin D—800 units per pint of Carnation.
- Known bacteriological safety.
- Safeguards of uniformity.

Carnation protects your recommendation—warrants your specification.

Carnation
"FROM CONTENTED COWS"

*Optimum prescription-
quality in today's trend to
the individualized formula*

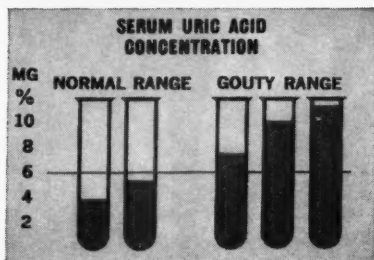




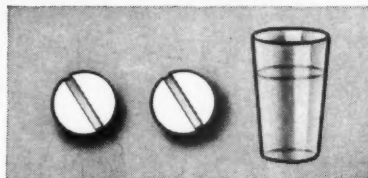
1. Recurrent joint pain followed by long periods of complete remission. (Percentages refer to incidence.)



2. Enlargement of bursae such as in this case involving the olecranon bursa.



3. Elevated serum uric acid levels.



4. Colchicine test: full dose (0.5 mg.) every 1 to 2 hours until pain is relieved or nausea, vomiting or diarrhea occur. The test requires usually 8 to 16 doses. Pain relief is highly indicative of gout.

FROM THESE FINDINGS...SUSPECT GOUT:

R_x

BENEMID

PROBENECID

A SPECIFIC FOR GOUT

Once findings point to gout, long-term management can be started with BENEMID. This effective uricosuric agent has these unique benefits:

- Urinary excretion of uric acid is approximately doubled.
- Serum uric acid levels are reduced.
- Uric acid deposits (tophi) in tissues are mobilized.
- Formation of new tophi can often be prevented.
- Fewer attacks and severity is reduced.

RECOMMENDED DOSAGE: 0.25 Gm. (½ tablet) twice daily for one week followed by 1 Gm. (2 tablets) daily in divided doses. BENEMID is a trade-mark of Merck & Co. Limited.



Merck Sharp & Dohme

Division of Merck & Co. Limited
Montreal 30, Que.

HOSPITAL MEETINGS

Hospital	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Children's	12:00 Surgical Rounds	10:00 Staff Rounds "B" Service 12:00 Postgraduate Seminars	9:30 Staff Rounds "C" Service 11:00 Clinical Path. Conference 11:00 Death Review (4th Wednesday)	11:00 Grand Ward Rounds	10:00 Staff Rounds "A" Service	9:00 Newborn Conference
Deer Lodge	Clinical Luncheon (1st Monday)			11:00 Ward Rounds		
Grace		Clinical Luncheon (3rd Tuesday)	9:00 Paediatrics 9:45 Medicine 10:30 Ob. & Gyn. 11:15 Surgery	12:00 - 2:00 p.m. Weekly Seminar		
Misericordia	1. Dept. of Surgery 2. Medical Records 3. Tissue Committee 4. Dept. of Medicine	2. Clinical Luncheon 3. Dept. Obs. & Gyn. 4. Dept. Gen. Prac.	2. Interne Committee			8:30-12:30 Ward Rounds
Municipal			7:30 p.m. Review of Deaths (2nd Wednesday)			8:30 Clinical Staff Conf. and Ward Rounds
St. Boniface	11:00 Paediatric Rounds	11:00 Surgical Rounds 11:00 Obstetrical Rounds	11:00 Grand Rounds 11:00 Cardio-Pulmonary Conf. (2nd Wednesday)	3. 8:00 Orthopedic Rounds 11:00 Tumor Clinic 12:00 Clinical Luncheon (2nd & 4th Thurs.)	11:00 Medical Rounds 11:00 Cardio-Pulmonary Conf. (4th Friday)	
St. Boniface Sanatorium		12:30 Clinical Luncheon (2nd Tuesday)				
Victoria		Tissue Committee (1st Tuesday)			1. Death Review 3. Clinical Luncheon 4. Active Med. Staff	
Winnipeg General		11-12:00 Medical Ward Rounds	9-10:00 Tumor Clinic 10-11:00 Surgical	12:15 Clin. Lunch. (1st & 3rd Thurs.)		
Brandon General			Medical Staff Lunch (Wed. prior to 2nd Tues. each month)			10:00-noon Clinical Drs. from S.W. Manitoba invited (Nov. to May)

*whenever there is
inflammation,
swelling, pain*

VARIDASE[®] STREPTOKINASE-STREPTODORNASE LEDERLE BUCCAL

Tablets
**condition
for a fast
comeback**



**as in
episiotomy**

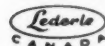
VARIDASE Buccal provides a simple, natural way to faster, early healing. By activating the fibrinolytic enzymes responsible for normal recovery, VARIDASE shortens the catabolic phase of host response and reverses inflammatory reaction. Edema is reduced.

VARIDASE is not an anti-infective, but by increasing the permeability of the fibrin wall, it eases penetration of natural regenerative factors and fosters healthy tissue growth, making infection less likely.

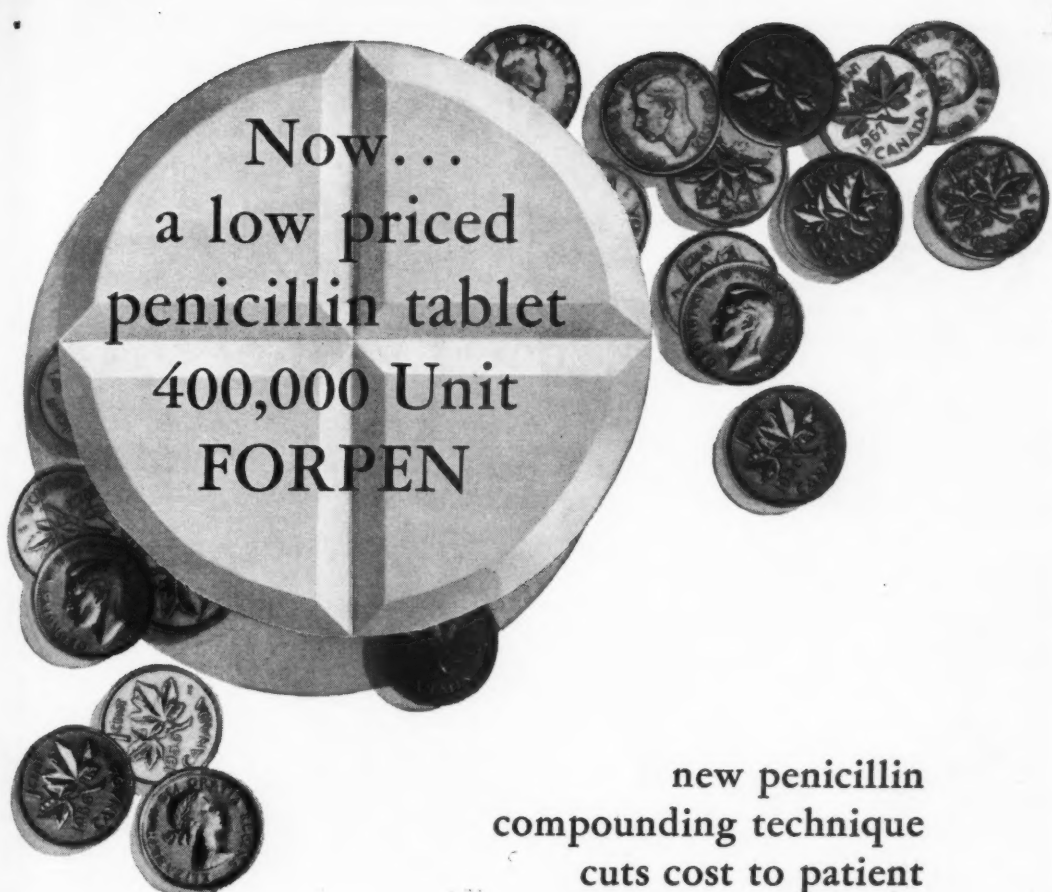
VARIDASE Buccal Tablets contain:
10,000 units Streptokinase and
2,500 Units Streptodornase.

Supplied: Boxes of 12 and 100.

®Reg. Trade Mark in Canada



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CYANAMID OF CANADA LIMITED,
Montreal, Quebec



Now...
a low priced
penicillin tablet
400,000 Unit
FORPEN

new penicillin
compounding technique
cuts cost to patient

Forpen

400,000 I.U. pot. penicillin G

A new chelating technique, which drastically reduces penicillin wastage during manufacture, makes possible FORPEN, an extremely low cost penicillin G tablet.

Buffered to resist gastric acids, Forpen tablets are also double scored on both sides to break into halves or quarters for easily adjusted dosage.

Available in 12's and 100's.

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Babies have to pass exams too!

And in these regular medical check-ups, Farmer's Wife babies get top marks for steady weight gains and few, if any, feeding upsets. This is no surprise to the medical profession, because the five different Farmer's Wife Infant Formula Milks make it easy to prescribe for each baby's individual dietary needs.

Besides the well-known Whole, Partly Skimmed and Skimmed Milks, now Farmer's Wife introduces two new Instant Prepared Formulas (Red Band—Whole Milk; Blue Band—Partly Skimmed Milk). These are another Farmer's Wife "first", the only evaporated milk products to incorporate a stable form of Vitamin C. Since the carbohydrate is already added, new Farmer's Wife Prepared Formulas eliminate the chance of contamination

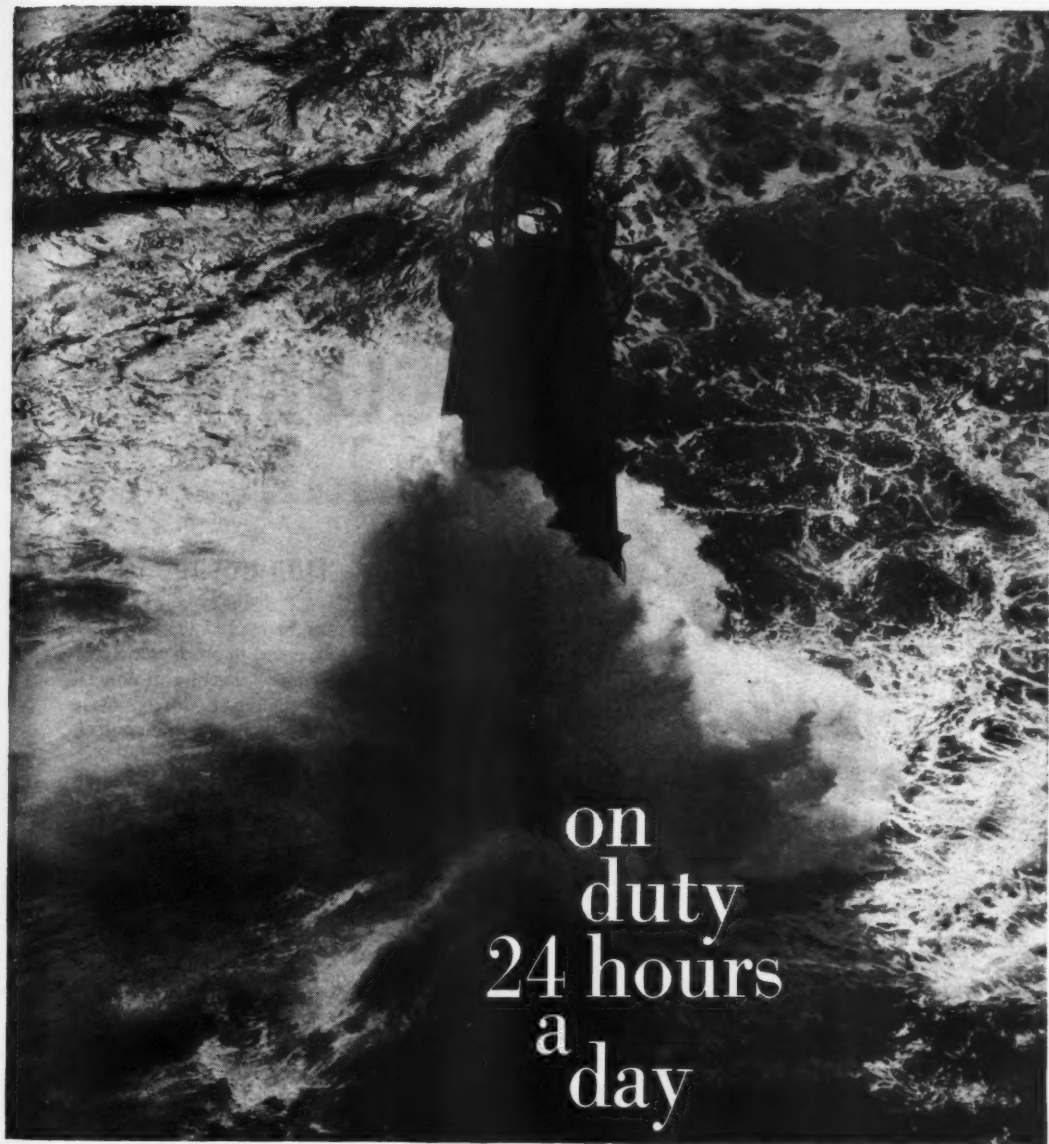
or error in formula preparation, and save mothers time, trouble and expense.

All five Farmer's Wife Formula Milks are Vitamin D increased. All are vacuum packed in modern, enamel-lined cans; stock rotation ensures absolute freshness. Available in all grocery and drug stores.



Farmer's Wife

Prescribed by many doctors—Approved by wise mothers



on
duty
24 hours
a day

Madribon 'ROCHE'

*New low-dosage,
long-acting sulfonamide*

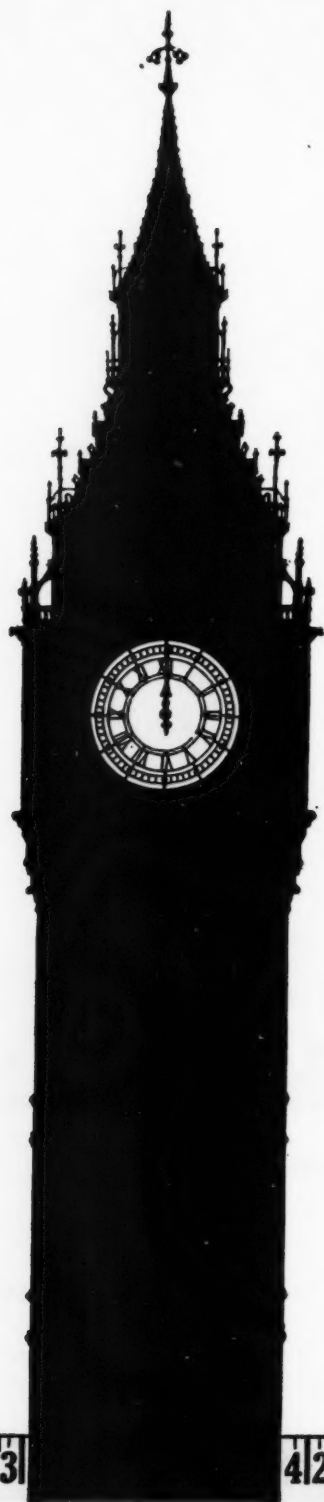
- highly active
- extremely well tolerated
- convenient and economical

*Tablets, 0.5 gm., Suspension, 0.25 gm./tsp.
MADRIBON® — 2,4-dimethoxy-6-
sulfanilamido-1,3-diazine*



HOFFMANN-LA ROCHE LIMITED

MONTREAL



Around-the-clock appetite control

PRELUDIN[®] ENDURETS*

Prolonged action dosage form

Now your patient may be offered the *reliability* of the most widely accepted anorexigenic agent—Preludin—with the *convenience* of a prolonged action dosage form—Preludin Endurets. Once daily dosage provides day-long appetite control.

Choice of dosage form: One Preludin Enduret, 75 mg, prolonged action tablet taken on arising for around-the-clock appetite control; or to fit the individual patient's requirements, one Preludin, 25 mg tablet, two or three times daily.

SUPPLY: Preludin Endurets, phenmetrazine hydrochloride, prolonged action tablets, round, pink, 75 mg each, bottles of 30 and 250.

Preludin tablets, scored, square, pink, 25 mg each, bottles of 100 and 1,000.

Under license from C. H. Boehringer Sohn, Ingelheim.

Geigy PHARMACEUTICALS
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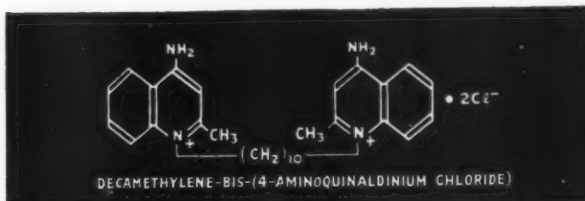
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DEQUADIN



A synthetic substance of wide antibacterial, and marked antifungal, activity—with 7 presentations for use in general practice

Dequadin was discovered and developed in Britain at the Research Laboratories of Allenburys. It is used in the form of the chloride, for which the full chemical name is Decamethylene-bis-(4-aminoquinaldinium chloride), and the B.P. approved name, Dequalinium chloride.

It has an exceptionally wide antimicrobial spectrum and it inhibits, at low concentration nearly all the bacteria pathogenic to man. Dequadin is active against organisms resistant to penicillin; its activity is not diminished in the presence of serum; it is not an antibiotic and does not produce resistant strains.

The antimicrobial spectrum of Dequadin

CLASSIFICATION	ORGANISM	Action of DEQUADIN
GRAM-POSITIVE BACTERIA	Bacillus subtilis	+
	C. diphtheriae	+
	Fusiformis fusiformis	+
	Staphylococcus aureus	+
	Staph. aureus (penicillin resistant)	+
	Streptococcus faecalis	+
	Streptococcus pneumoniae	+
	Streptococcus pyogenes	+
	Streptococcus viridans	+
GRAM-NEGATIVE BACTERIA	Esch. coli	+
	Haemophilus influenzae	+
	Klebsiella pneumoniae	+
	Neisseria catarrhalis	+
	Neisseria meningitidis	+
	Pseudomonas pyocyanea	+
	Proteus vulgaris	+
	Salmonella dublin	+
	Salmonella typhi	+
	Salmonella typhimurium	+
SPIROCHAETES	Vibrio cholerae	+
	Treponema vincenti	+
FUNGI	Actinomyces spp.	+
	Candida albicans	+
	Trichophyton mentagrophytes	+
	Trichophyton sabouraudi	+
	Trichophyton rubrum	+
	Trichophyton verrucosum	+

Dequadin Preparations :
 Dequadin Lozenges
 Dequadin Cream
 Dequadin Paint
 Dequadin Obstetrical Cream
 Dequadin Vaginal Tablets
 Dequadin Tulle
 Dequaspon—absorbable gelatin sponge

Accuracy . . .

The technique of craftsmanship as we apply it to your prescription, is a guarantee of accuracy.



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Phone WH 2-7118

Victorian Order of Nurses

The nurses cared for over 700 patients during the summer months, making over 10,000 visits to them. The attending physician's orders were carried out during each visit. Most of the patients were classified as "medical" or "surgical," but mothers returning home with a new baby also used our visiting service.

We serve the entire Greater Winnipeg area, including Transcona and Charleswood.

Call WH 2-8529.

Oral Surgeon Required

Wanted: Oral Surgeon (licensed) holding or able to obtain Manitoba Standing—2 years post-graduate studies required, preferably capable of and experienced in Intravenous Anesthesia. Receiving 40% of office gross cash collected and earned by applicant if cash is collected for same. Apply: Box 801, Manitoba Medical Review, 601 Medical Arts Bldg., Winnipeg 1, Manitoba.

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antibacterial
preparation for topical
treatment of eye infection

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When the final screw is tightened and the last lens polished, it's Proper Fitting that counts.

The highest standards of technical accuracy go hand in hand with skilled fitting to insure your patient's comfort.

RAMSAY-MATTHEWS LIMITED

103 Medical Arts Building
Winnipeg, Manitoba

DEPARTMENT OF HEALTH & PUBLIC WELFARE
COMMUNICABLE DISEASE PICTURE

**North of 53
District**

Three polio cases from Flin Flon and one case from The Pas. Enteritis and dysentery still being reported, also scarlet fever.

Northern District

Two polio cases reported from Dauphin area. One of these, a 57 year old man, is the province's only polio death this year.

Northwestern District

Infectious hepatitis reported from several communities in this area.

Brandon District

Infectious hepatitis and scarlet fever are in the majority with some endemic measles.

Central District

No communicable diseases of any significance have been reported.

General

There have also been six cases of paralytic polio in Indians from Norway House area giving a total of 17 cases for the year.

LIST OF DEATHS FROM COMMUNICABLE DISEASES

August, 1959

URBAN: Cancer, 67; Pneumonias (other forms), 12; Tuberculosis, 1. Other deaths under 1 year, 19. Other deaths over 1 year, 230. Stillbirths, 18. Total, 267.

RURAL: Cancer, 25; Influenza, 2; Meningitis (meningococcal), 1; Pneumonia, Lobar (490), 1; Pneumonias (other forms), 5. Other deaths under 1 year, 14. Other deaths over 1 year, 122. Stillbirths, 12. Total, 148.

INDIANS: Diarrhoea and Enteritis, 1; Influenza, 1; Pneumonias (other forms), 1. Other deaths under 1 year, 4. Other deaths over 1 year, 2. Total, 6.

Winnipeg District

Several cases of viral or aseptic meningitis reported. Some are unspecified while others due to Echo or Coxsackie. Scarlet fever, infectious hepatitis and pertussis are in the majority. Case of diphtheria in L.G.D. Fisher.

Southern District

A case of brucellosis reported from Swan Lake. Infectious hepatitis reported from different parts of the district.